textile bulletin

JANUARY • 1956

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ABC NBP

Count on
VEEDER-ROOT

for Profit-Protection all through the mill

2-3-4 Shift Pick, Hank, Yardage and Knitting Counters are convertible right in the mill . . . when, as and if operating conditions warrant. They keep accurate count of production . . . help your workers do a better job.

Loom Cut Meters help reduce short lengths and seconds . . . and make possible the sale of uniform lengths . . . without cut marks. Cut Meter records measurement of cloth as it passes over the sand roll.

New "Vary-Tally" Multiple-Unit Reset Counter is useful in many departments of mill operation, from inventory to inspection, or any other job where classification and count of types is desired. Made in combinations up to 6 banks high and 12 units wide . . . also in single units.

Accurate count is sound Cost-*Countr*ol all through the mill. Check with the nearest Veeder-Root office today on your own counter needs.

Loom Cut Meters for assuring uniform cut lengths of cloth . . . without cut marks.

"Vary-Tally" Multiple-Unit Reset Counter for inspection, inventory, etc.

2-3-4 Shift Convertible Counters for loom, frame, knitting machines, etc.

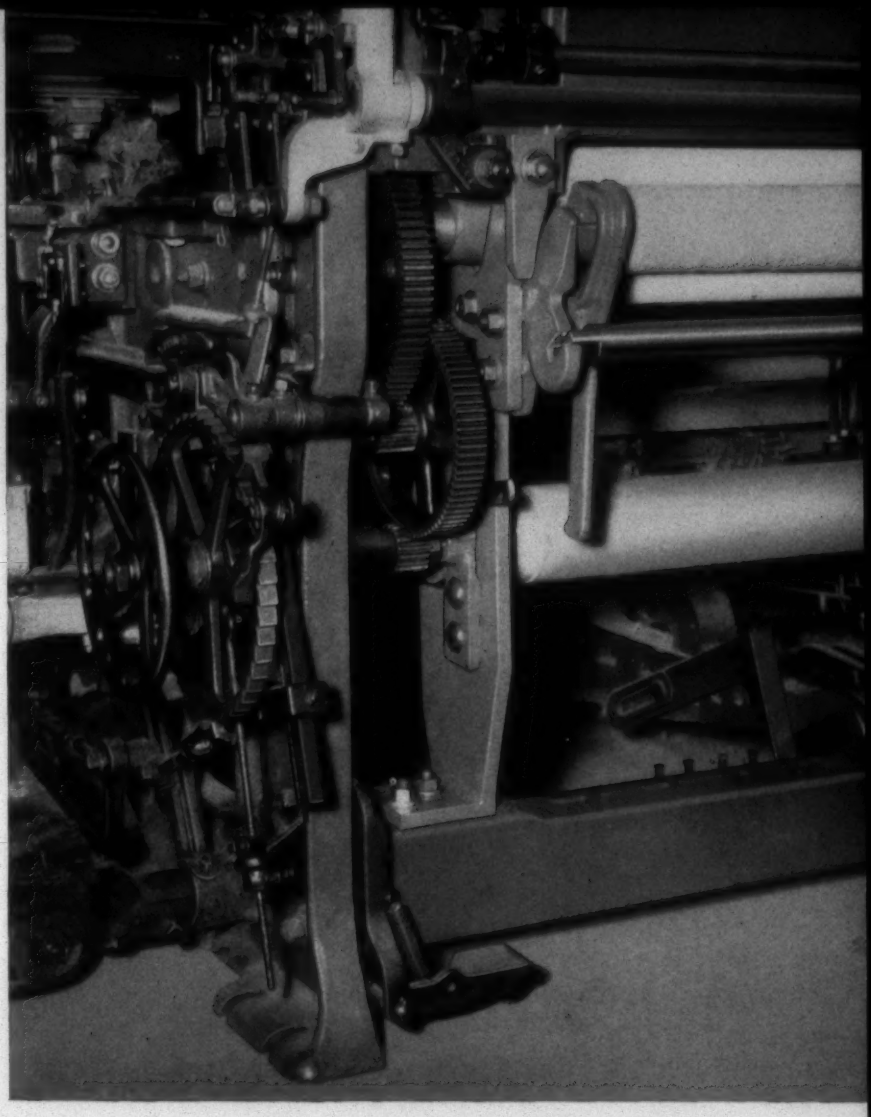
Get this Veeder-Root "COUNTROL PACKAGE" on All Machines

ON LOOMS	ON FRAMES
2-3-4 PICK COUNTER	2-3-4 HANK COUNTER
CUT METERS	VARY-TALLY

VEEDER-ROOT IN

"The Name that Counts"

INCREASED LOOM VERSATILITY, EASIER DOFFING WITH NEW DRAPER TAKE-UPS



New Draper High Roll Ratchet Take-Ups now make it possible to weave synthetic goods on X-2 Model Looms.

These Take-Ups are equipped with Double Take-Up Rolls providing increased frictional surface to hold the cloth in weaving spun and filament yarns.

A separate wind-up, chain and sprocket driven from the lower Take-Up Roll, permits easy doffing. The use of a Cam Lever type Pressure Roll permits the Cloth Roll to be doffed without stopping the loom.

For application of new Draper Take-Ups and other labor saving devices consult your Draper representative . . . *today*.

New type Pressure Roll permits doffing without stopping the loom.

1908946

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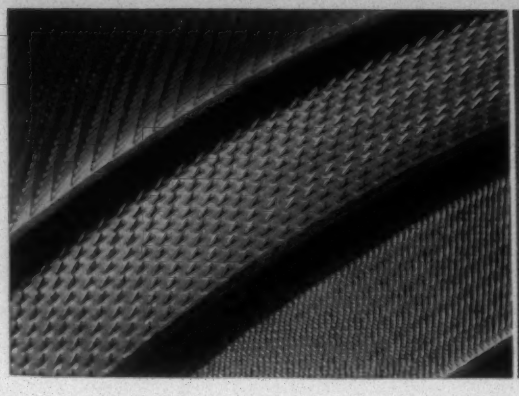


Ashworth Tips ON CARD CLOTHING

No. 25 in a Series

CARE OF CARD FEED ROLLS

There is an important relation of the feed roll to the quality of carding. Uniform detachment of fibres from the picker lap is not obtainable unless the entire assembly is in good mechanical condition.

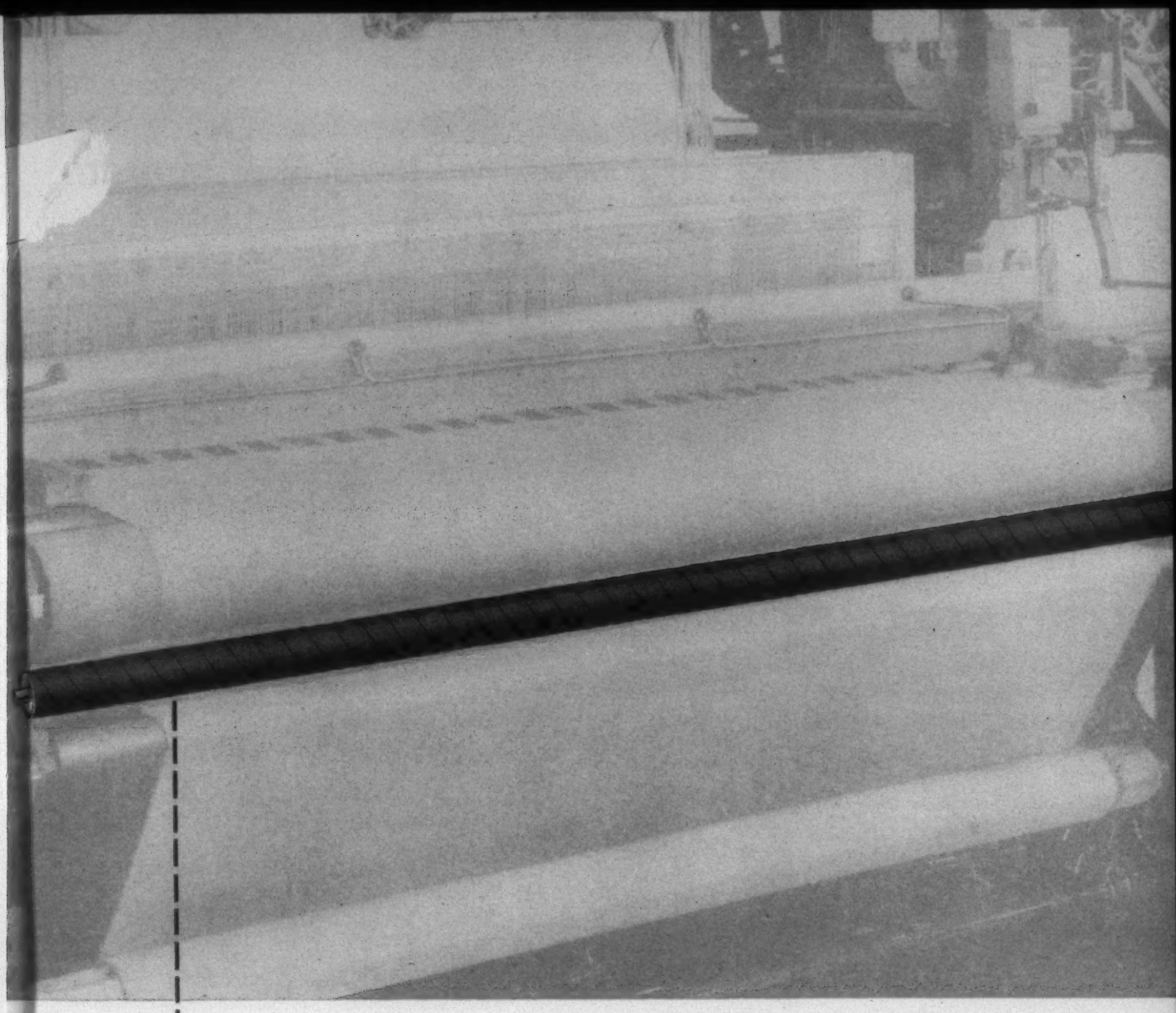
The weighting arrangement of this member of the card lends itself to rapid wear of bearings and journals, if oiling is not attended to and oil holes kept open. Plucking of large tufts of fibre, resulting in the formation of neps and other irregularities in the sliver, can be expected if excessive wear is present.

Worn journals can be rebuilt to their original diameters; but care must be exercised should boring and bushing of the bearings be attempted, since there is a definite relationship between the bottom of the feed roll and the surface of the feed plate. Usually, when the roll, journals and bearings are new, there is .006″ to .008″ clearance between the roll and the surface of the plate. Repairs to bearings by boring and bushing should be undertaken with extreme care so as not to alter the clearance established by the manufacturer of the card.

Feed rolls should be properly weighted, with weight hooks straight and weights free from any interference from protruding bolts or nuts.

Flutes that are nicked and burred tend to accumulate fibre in the form of a roller lap. If allowed to build up, uniform pressure throughout the feed roll's length is not obtained. Those that have become rounded excessively, or where the grooves are too shallow, fail to exert an adequate "bite" and permit the lickerin to detach small tufts of stock without benefit of its combing action.

Where synthetic fibres are being carded, and because plucking to any degree is detrimental to quality and sometimes to card clothing as well, a feed roll wound with a special flat top wire will be found to operate to the mill's advantage. Designed to afford a slight penetration into the lap, it increases fibre friction and, by reason of the direction in which the teeth point, exerts a holding action that enables the lickerin to function more effectively.



This resilient press-roll covering reduces fabric creasing

Here's a loom press-roll covering that's specially made to prevent cloth from creasing on the take-up roll. It is Armstrong DK-149.

Because it's made of sponged synthetic rubber reinforced with springy cork particles, this unique covering has the resilience to hold the cloth snugly against the full width of the take-up roll.

The result is that take-up tension is maintained firmly and evenly from selvage to selvage, greatly minimizing the risk of creasing even the most delicate fabrics.

The resilient cork-and-rubber composition of DK-149 means long wear, too. It won't flatten out or develop high spots. In many mills, DK-149 Covering has run for more than a year—and maintained good fabric control all the while.

Armstrong DK-149 comes in handy ribbon form for quick, easy application to the roll. Your Armstrong man will be glad to arrange a test of DK-149 on your looms.

For information on the full line of our loom supplies and other textile products, send for your copy of "Armstrong Textile Roll Coverings and Mill Supplies." Address Armstrong Cork Company, Ind. Div., 6901 Davis St., Lancaster, Penna.

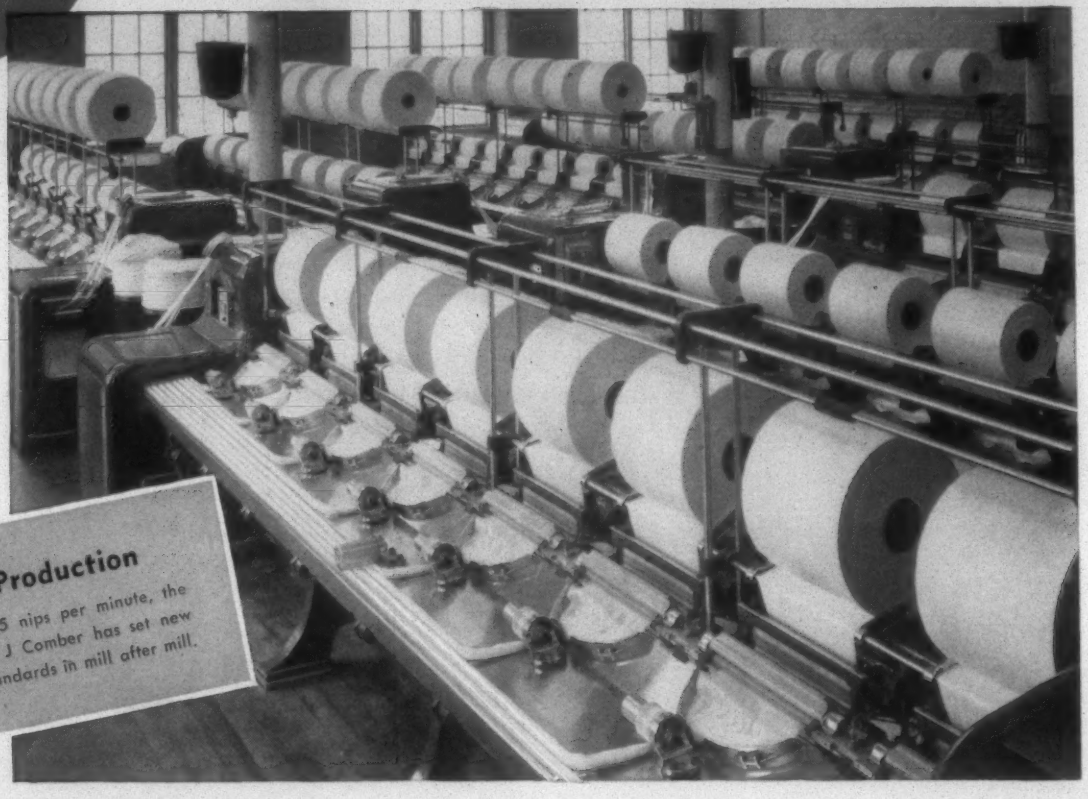
Armstrong LOOM SUPPLIES

... used wherever performance counts

Take-Up Roll Coverings • Clutch Discs and Inserts • Temple Roll Coverings • Brake and Let-Off Strips

4 Important reasons why leading combed yarn mills name the Whitin MODEL J COMBER

"The finest comber in the world!"



1 High Production

Running at 165 nips per minute, the Whitin Model J Comber has set new production standards in mill after mill.

2 Unsurpassed Quality

The Whitin Model J Comber is unmatched for continuous high quality sliver, superior nep removal, accurate waste control and selective short fiber extraction.

At the Second International Textile Exhibition in Brussels, against world-wide competition, the Whitin Model J Comber again won the acclaim of textile experts from many countries, confirming hundreds of reports by its users that it is "the finest comber in the world"

3 Extremely Low Maintenance Cost

Hundreds of mills report that maintenance costs are negligible. The average is less than $25.00 per year per comber for replacement parts. Settings remain fixed with no need for adjustments between overhauls.

4 Easiest to Operate

Because it has 50% fewer working parts than other combers and is so simple in design, the Whitin Model J Comber is extremely easy to operate.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

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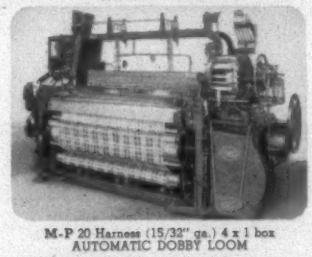
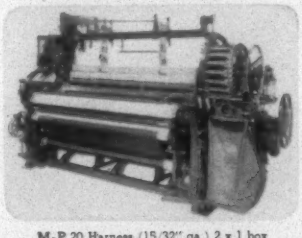
M-P 20 Harness (1/4" space) 2 x 1 box
AUTOMATIC FILLING MIXING HEAD LOOM

M-P 4 Harness 2 x 1 box AUTOMATIC
UNDERCAM LOOM



M-P 20 Harness (15/32" ga.) 4 x 1 box
AUTOMATIC DOBBY LOOM



M-P 20 Harness (15/32" ga.) 2 x 1 box
AUTOMATIC DOBBY LOOM

M-P 25 Harness (4/10" space) 4 x 1 box
AUTOMATIC HEAD LOOM

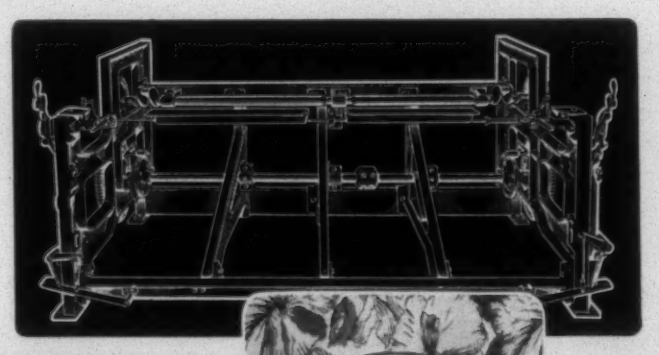
YOUR FABRIC-CONSTRUCTIONS CAN BE "TURNED ON A DIME", TOO...

WHEN YOUR WEAVEROOM IS M-P EQUIPPED

Sudden turns of fashion can't throw your balance-sheet off balance . . . when your weaveroom has the Many-sided Protection of C & K's new Multi-Purpose Looms.

For, with an adequate complement of these unique looms, you can literally "turn on a dime" . . . *convert overnight from plain to fancy constructions, or vice versa.*

C & K's new M-P design is the first to give this *complete convertibility* . . . which means More Protection and More Profit than you have ever had before. *See C & K today.*



This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are WOVEN Fabrics.

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You may have the very best cards in the world . . . but is your Card Clothing properly engineered to obtain maximum production of top quality fabrics? Remember, it is your Card Clothing that does the actual work.

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C-2

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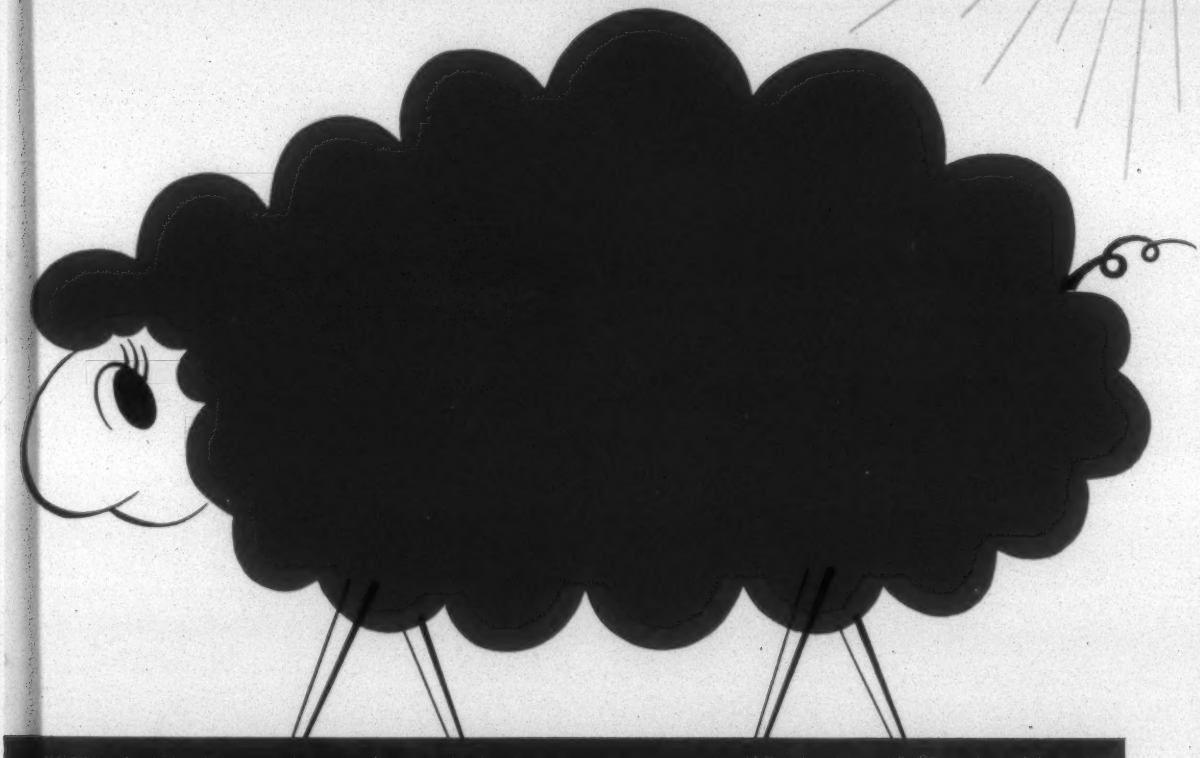
for Wool and mixtures
that are "safe in the Sun"



NATIONAL CHROMOLAN® RED GRE

In all strengths National Chromolan Red GRE has many desirable properties that commend its use on wool and as a union dye on nylon-wool mixtures. This low pH pre-metallized color produces moderately bright shades of yellowish red with very good to excellent fastness to light, washing, perspiration, carbonizing and cold water bleeding.

A good money value, National Chromolan Red GRE deserves a place in your wool and wool-mixture dye formulations. A working sample will demonstrate its worth. Our Bulletin 421 gives complete properties. Both are yours-for-the-asking from our nearest office.

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ALLIED CHEMICAL & DYE CORPORATION
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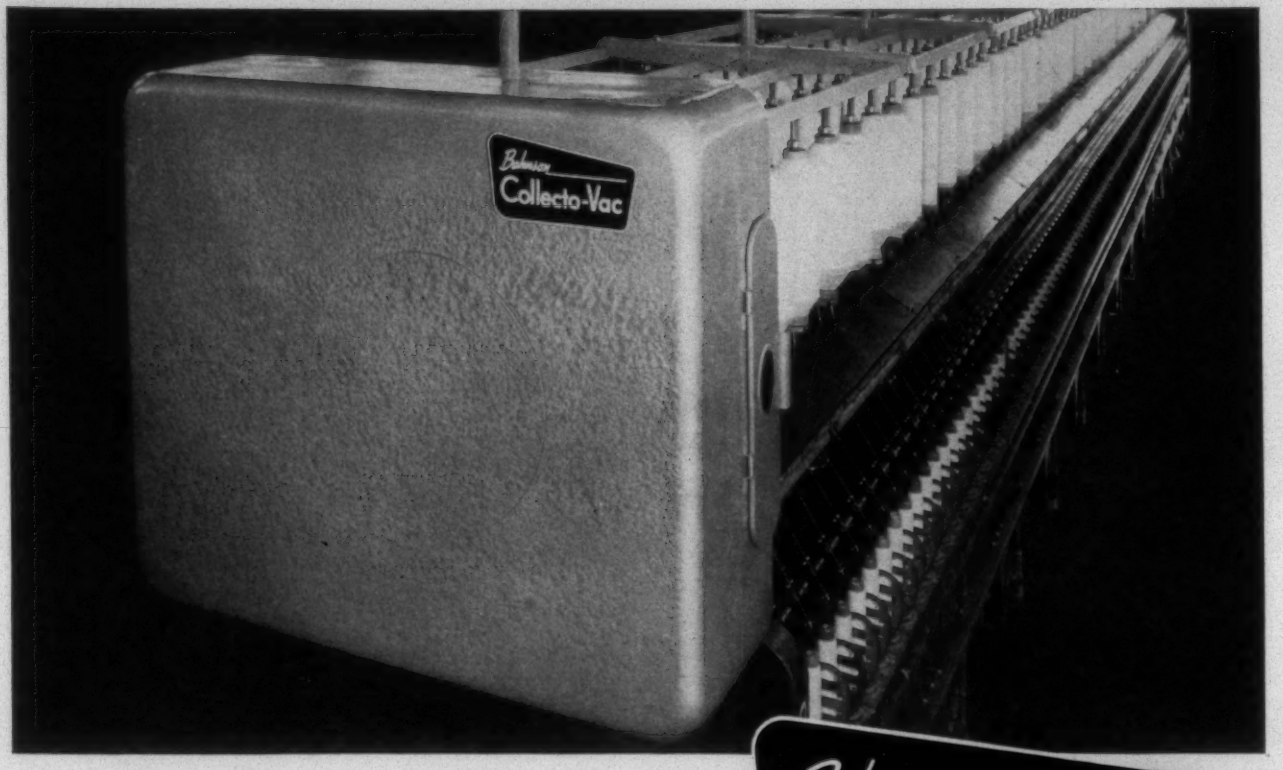
Bahnson's 40 years' air-handling engineering experience brings you

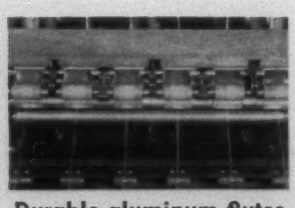
Important savings and greater efficiency

in automatic broken-end collection



with the NEW

Bahnson Collecto-Vac



Durable aluminum flutes

Anodized aluminum flutes *eliminate flute warpage* and minimize static electricity build-up on the smooth collecting surfaces.

Low power consumption

Specially engineered main duct gives maximum pressure distribution throughout system utilizing a Bahnson designed fan for high air handling efficiency.

Functional double entry

Vacuum sealed doors on each end of collection box facilitate operation, save time and money.

High suction efficiency

Collection ducts and flute connecting tubes are completely air-tight due to specially compounded seals at tube joints. Efficient suction performs double duty, too, in lint and fly recovery.

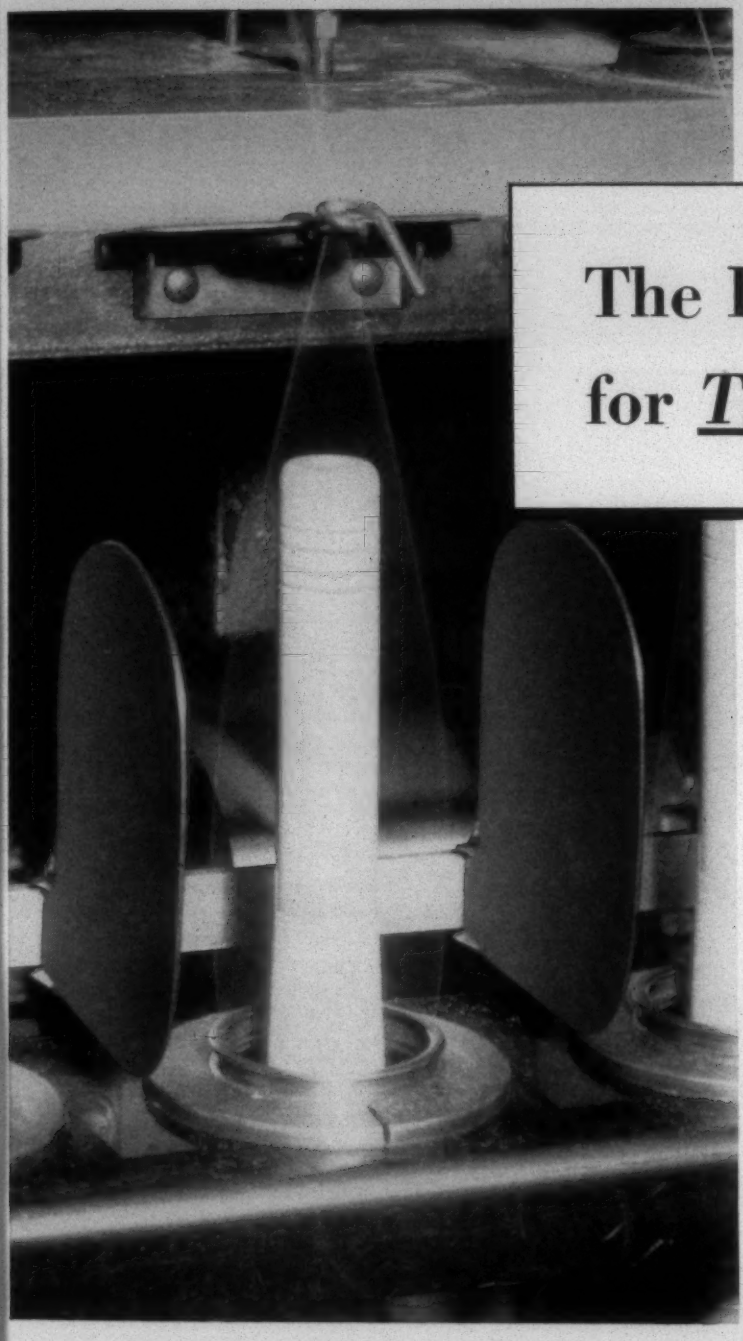
91 OF THE TOP 100

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!

Bahnson COMPANY
WINSTON-SALEM, N. C.

WRITE US TODAY
for additional information on the *new* Bahnson Collecto-Vac.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION



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Whenever, wherever you need Ring Travelers . . . and particularly for the fussy jobs . . . call National-Sterling. Our staff of experienced engineers is at your disposal always. A stock of over 18,000 different sizes, weights, and styles of Ring Travelers for twisting and spinning all natural, synthetic, and blended fibres is as near as your telephone. From our Pawtucket plant or newly enlarged Charlotte warehouse we can supply your needs promptly, or when necessary, design travelers for your special applications.

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NATIONAL RING TRAVELER CO., PAWT., R.I., U.S.A.

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Here are the reasons why

The SUPERLOFT Stretch Yarn Machine

is the most economical producer of top quality stretch yarn

A 216 spindle SUPERLOFT machine will produce over 400 pounds of stretch yarn a week.

Also, it does this in one single, high speed continuous operation, which assures cleaner, more uniform quality yarn.

This high quality performance is the result of outstanding Leesona-engineered features. For example:

- *Feed rolls are so arranged that one speed setting controls all. The same is true of take-up packages. Once the speeds are set to provide proper tension, that tension can never change — it remains constant from pirn to package and from spindle to spindle throughout the machine.*
- *Temperature of the heating element is controlled with precision accuracy along its entire length, and can be checked by thermometers located at regular intervals.*
- *The false twist spindles, which simultaneously twist and untwist the heated yarn, run at least 30,000 RPM — the equivalent of 60,000 turns per minute on conventional equipment.*
- *Take-up packages are staggered in two decks, enabling spindles to be set 2¾ inches apart in a single deck. This conserves floor space.*
- *The extra-solid UNIRAIL® type construction reduces vibration and assures long service life and low cost maintenance.*

You can buy the SUPERLOFT machine on a royalty-free license agreement, and take advantage of easy financing through either of the two Leesona Pay-As-You-Profit Plans.

Helanca*

High quality stretch yarns from the SUPERLOFT machine more than meet Helanca yarn standards, and, through an arrangement with Heberlein Patent Corporation, users of the machine may procure the right to label their yarns with the well-recognized Helanca name.

See your Universal representative, or write direct for more information.

*REGISTERED TRADE MARK, HEBERLEIN PATENT CORPORATION

23.5.31

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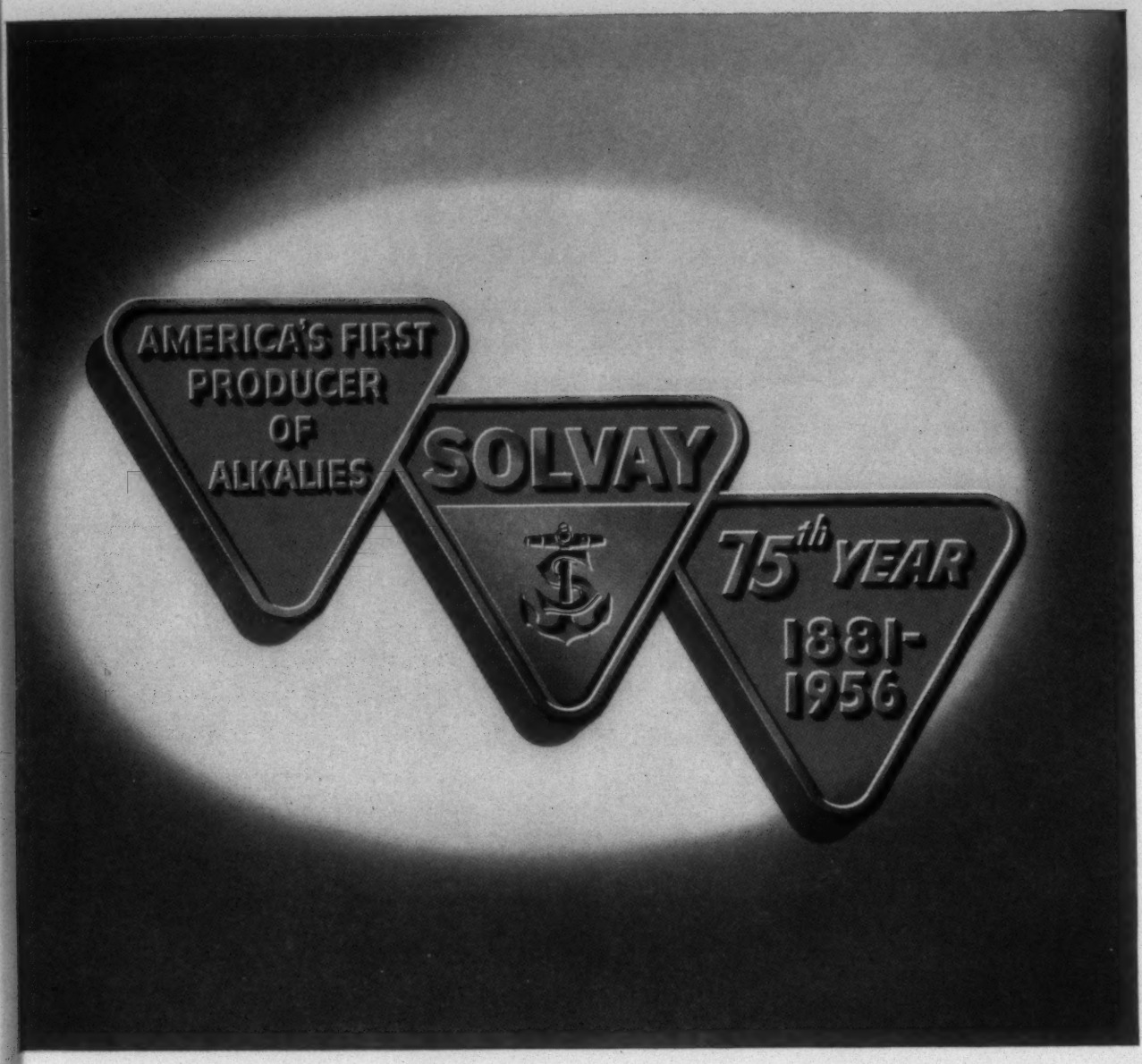
Winding and Twisting Machinery for Natural and Synthetic Yarns



SOLVAY'S 75th YEAR

As America's pioneer producer of alkalies, we are proud of the contributions Solvay has made to the dynamic growth of American Industry during the past 75 years.

It is natural to look at our 75th year as a mark of achievement.

Be assured that in the years of industrial development ahead Solvay products and service will continue to set the pace of leadership.

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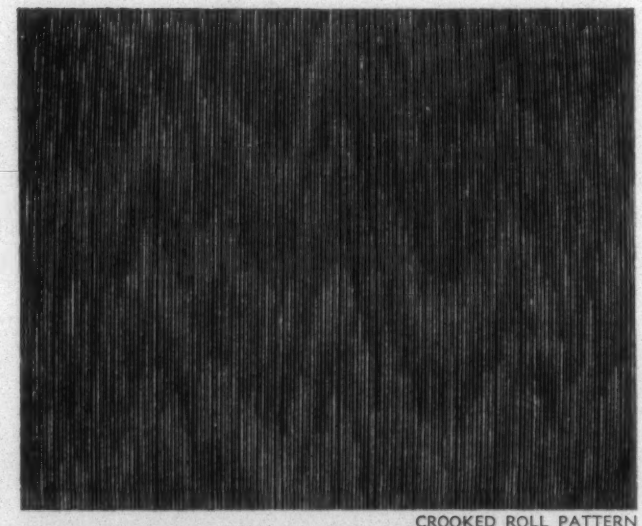
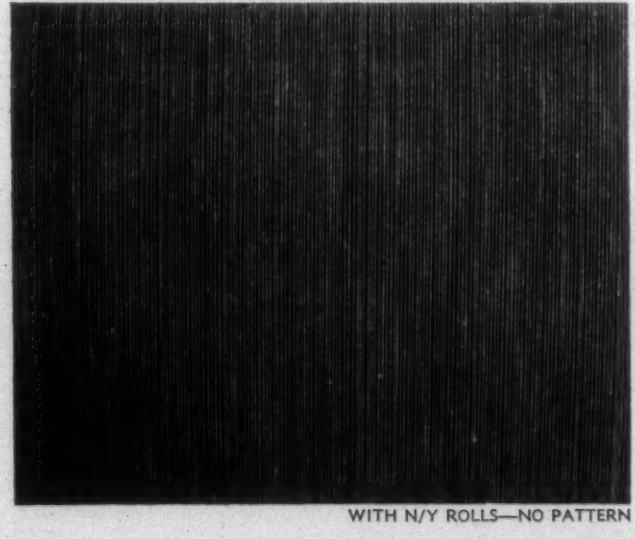
Compare!

performance proves

WITH OVER 1000 FRAMES OF N/Y ROLLS IN OPERATION, MILLS REPORT UP TO 40% LESS VARIATION



CROOKED ROLL PATTERN



WITH N/Y ROLLS—NO PATTERN

Are you having yarn variation caused by crooked rolls?

We have the answer to your problems. No crooked roll pattern with Norlander-Young Case-Hardened Drafting Rolls.

Twenty years of experience in precision engineering and manufacturing have gone into the Norlander-Young drafting rolls. For quality and precision, diameters are held to .0015". For straightness, runout not to exceed .003".

Nearly Fifty Years of Service and Quality — *Twenty-five Years in the South*

norlander-young machine company

GASTONIA, NORTH CAROLINA

FLUTED ROLLS FOR SPINNING • FLYER FRAMES • COMBERS • DRAWING & LAP MACHINES

Soromine AT

for that soft, smooth finish

This new white amphoteric softener is ideal for treating dyed, printed or white bleached textiles... whether manufactured from animal, cellulosic or synthetic fibers. Besides imparting a full, smooth hand with good body, it reduces static electricity and gives excellent lubricity to yarns.

Being an ampholyte, SOROMINE®AT can function either as a cationic softener in acid liquors, or as a non-ionic and/or anionic softener in neutral and alkaline liquors. Application on yarns and piece goods is simple, since its exhaust can be controlled by pH adjustment.

It can be applied on quetch or pad, in pressure machines, jigs or overhead reel machines. It is compatible with the usual finishing ingredients — such as urea formaldehyde and melamine resins, starches, sulfonated oils, dextrin, etc. Other advantages of SOROMINE AT are its resistance to yellowing and discoloration, and lack of effect on light fastness of dyed fibers.

Our application engineers will be glad to help you incorporate SOROMINE AT softening into your finishing process. Write today for booklet with complete information.

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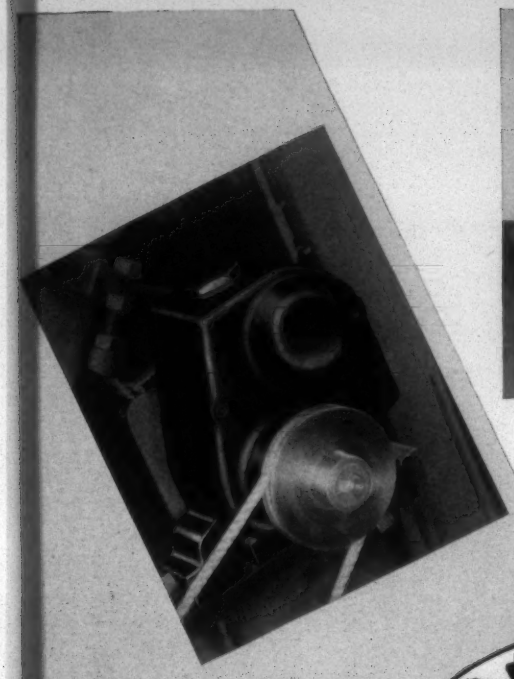
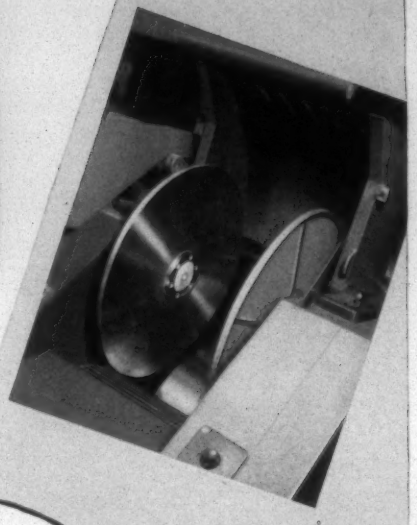


ANTI-FRICTION COMB BOX

- Requires only routine inspection.
- Vibration and power consumption at a minimum.
- Micrometer-type two-way adjustable foot-end stand.

14" AND 15" COILERS

- Lengthens the doffing cycle.
- Adds extra poundage per can.
- Increases production per man hour.



4" PINTLE FOR LAP WINDERS

- Full spools 2" larger in diameter for greater productive efficiency.
- Improved grease retention in bearings for better lubrication.
- For increased stud rigidity and load capacity.

NEW!

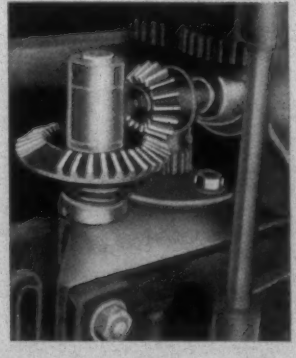
SACO-LOWELL

ASSEMBLIES TO IMPROVE YOUR EQUIPMENT

MORE EVIDENCE THAT "IT PAYS TO USE GENUINE **SACO-LOWELL REPAIR PARTS"**

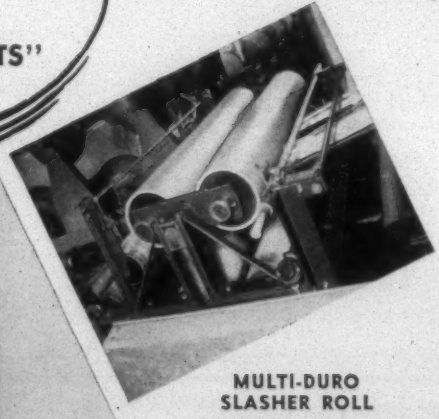
ANTI-FRICTION COMPOUND

- Extremely accurate, with very low power consumption.
- No oil drip — three grease fittings only.
- More compact arrangement of internal gearing.



STEEL GAP GEAR FOR ROVING FRAMES

- Eliminates gap gear tooth breakage.
- Spring cushioned meshing of gears at change of builder motion.



MULTI-DURO SLASHER ROLL

- Improves evenness of size application.
- Reduces size consumption.
- Less shedding at split rods and loom.
- Minimizes end breaks in the weave room.

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

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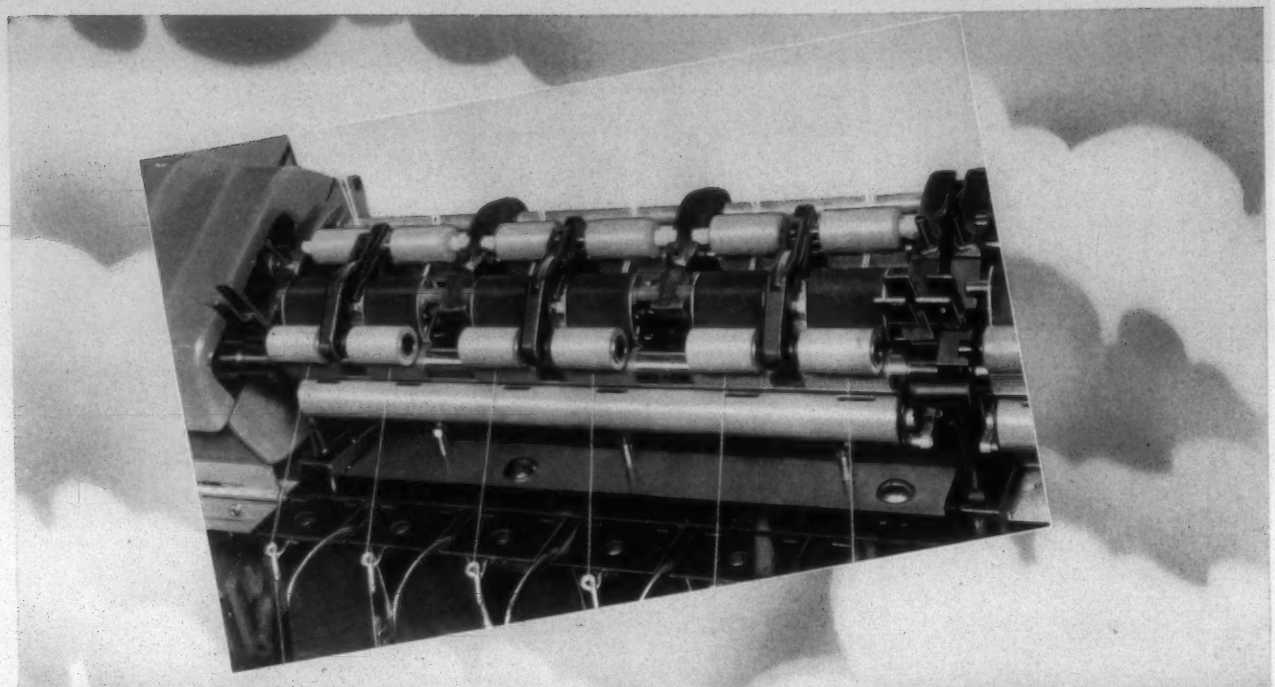

1,250,000 SPINDLES OF SACO-LOWELL DUO-ROTH —BOTH STANDARD AND STAY-CLEAN*—

are now in operation producing higher quality, stronger, more even yarn in over 280 mills.

1. The long, thin, flexible bottom apron passes the nose of the apron bar with a small radius of curvature in a manner which allows a close setting between the nip of the aprons and nip of the front roll, a condition necessary for the most efficient fibre control in the final drafting zone.

2. Without exception, mills using the Duo-Roth System have increased their drafts as much as 50 to 100 per cent, and at the same time have produced a yarn of greater strength and evenness.

3. The greater strength and evenness is vividly shown in a Duo-Roth installation producing 21's yarn from .75 hank single roving, employing a 4.52 twist multiple — the break factor secured is 2339. Previously, the same frames running regular drafting were producing 21's yarn from 1.50 hank single. With same twist multiple highest break factor obtainable was 2104.

4. Duo-Roth is cleaner; there is a reduction in clearer waste as the shorter fibres are efficiently controlled. After raising the draft from 19 on Roth to 33 on the Duo-Roth, one mill was able to extend the top roll cleaning period from 24 hours to 48 hours, on a three-shift basis. Another mill, with a 50 per cent increase in draft after changing to Duo-Roth, also extended the top roll cleaning period from 24 hours to 48 hours.

5. Duo-Roth was engineered to be a simple, quickly applied change-over to existing Roth installations. Mills having Roth frames in good condition will find that Duo-Roth will pay for itself in savings resulting from increased draft, reduced cleaning, improved operating conditions and smoother, stronger yarns.

6. Duo-Roth is the only double-apron drafting system which does not develop wear of the cage against the apron driving roll. The standard Duo-Roth middle top roll, driving the apron, is built with a stationary arbor. The cage rests against the stationary arbor, eliminating the possibility of cage wear — a common problem with other systems.

7. The knurled and polished surface of the Saco-Lowell Duo-Roth middle top roll creates a positive and uniform drive for the aprons. Since both of the driving bosses are tied together, there is no variation in the speed of the top roll aprons regardless of the bulk of the strand being drafted. There is no slip or hesitation to create unfavorable conditions in the principal drafting zone.

8. The Duo-Roth, with the adjustable cage is extremely flexible. The correct pressure to establish the necessary degree of fibre control for the most efficient drafting can be quickly attained through easy adjustments.

A BROCHURE FULLY DESCRIBING SACO-LOWELL DUO-ROTH IS AVAILABLE ON REQUEST. SACO-LOWELL ENGINEERS WILL ALSO BE GLAD TO ARRANGE A DEMONSTRATION.

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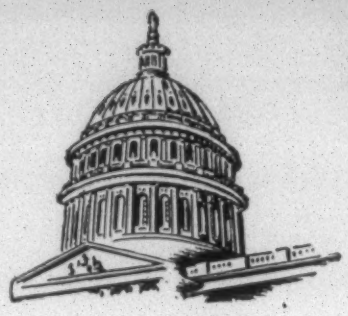


WATCHING WASHINGTON

[Exclusive and Timely News from the Nation's Capital]

Growing power of the unions on the wage and production fronts is being challenged by disgruntled farm groups. The American Farm Bureau Federation, with 1.6 million members, is pressing for wider adoption of state right-to-work laws, and wants compulsory unionism outlawed through an amendment to the Taft-Hartley Act. The National Grange, with 860,000 members, is joining the Federation in the effort.

Chief contention of the farmers is that soaring wage levels are raising prices for farmers at a time when farm prices are falling. They charge business with making a "soft" peace with the unions each time a strike threatens, and unloading the higher costs on consumers. They are especially resentful of expanding fringe benefits, and higher prices in the June settlement of the steel dispute, which they say has increased the disparity between farm and other prices.

Unions are looking upon the growing upsurge among farmers with concern, especially as it may affect action in state legislatures. They have sought to unload the blame for low farm prices and high industrial prices on the Administration. But the farm groups say that high wages, shorter hours and expanding fringe and unemployment benefits is hitting the farm areas hard, and adding to the pressure of falling farm prices.

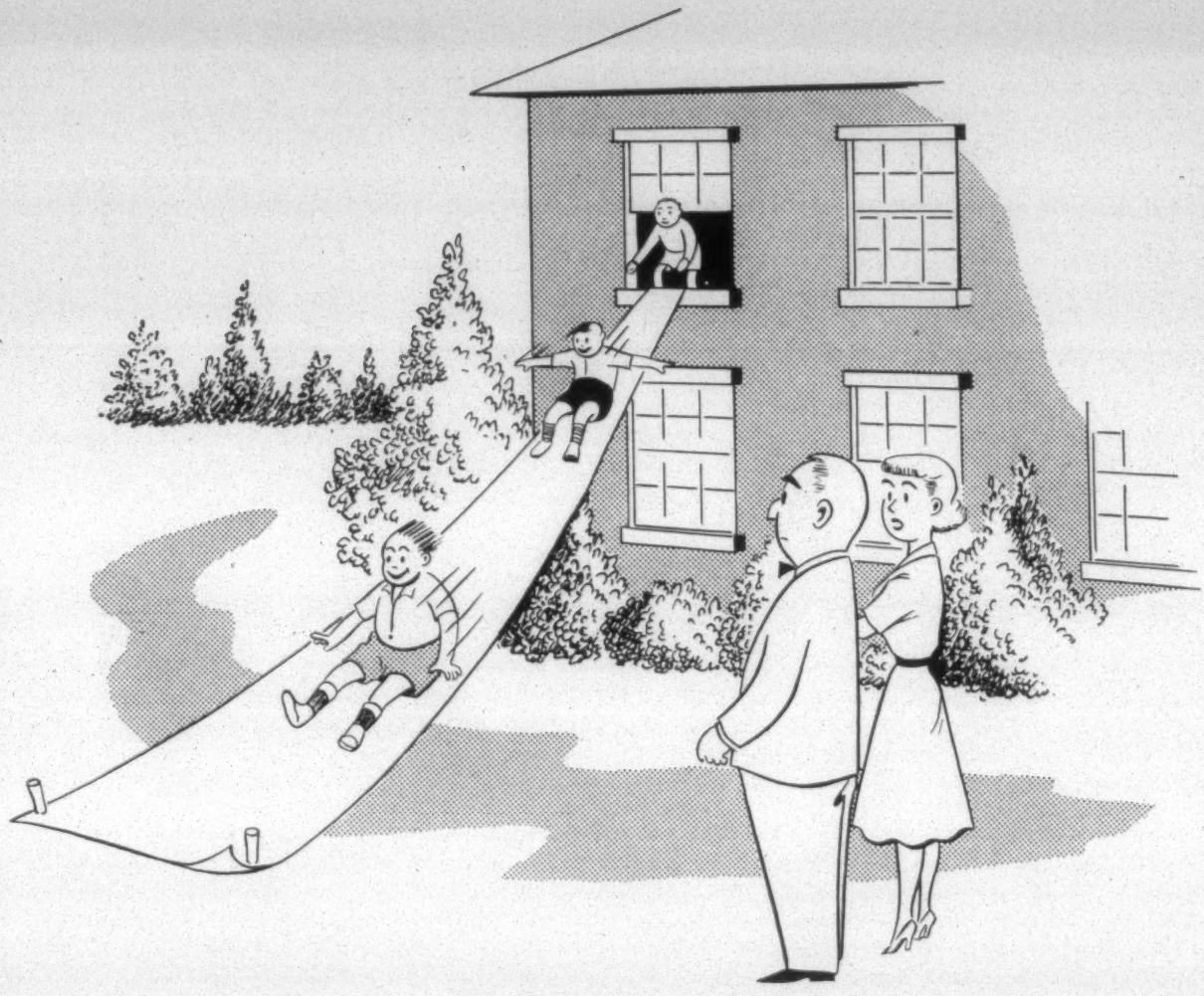
The National Grange, joining for the first time in the right-to-work movement, is demanding extensions of such laws to all states. The unions are described by the Grange as having established a "vast monopoly" in the national economy, and expanding their power through arbitrary wage contract provisions requiring union membership to hold a job.

Changes in the Taft-Hartley Act are not in prospect in this session, and the union leaders are not asking for them. While this floor-written piece of legislation does not wholly satisfy anyone, neither the unions nor leaders in Congress want controversy over the law at this time. The unions are fearful of the "tightening up" the law might get, especially in respect to right-to-work provisions, and they prefer its present provisions as a "campaign issue" this year.

Present plans of the Administration call for asking Congress to approve a ten-year program of economic aid to "friendly nations." The sum to any country would vary, with a ten-year maximum up to $1 billion. Details of the proposal have not been revealed to Congress. Since Congress would have to grant the money, even a ten-year program could be terminated in any year.

Prospect of an early cut in federal taxes, corporate or personal, is as dubious now as in the last session of Congress. The House Ways and Means Committee is not disposed to report out tax-cutting legislation now. Senator Byrd, chairman of the Senate Finance Committee, says it is not time to reduce taxes until the federal budget is nearer in balance.

Speaker Rayburn has exhibited marked coolness to a quick income tax cut, or to consideration of any tax legislation until budget proposals are out of the way. The only real sentiment in the House for tax cutting is to increase



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the personal exemption of taxpayers in accord with the proposal put forward by Senator George to fix the sum at $700 instead of $600.

Tax changes should be based solely on careful analysis of economic and business conditions, the House-Senate Economic Subcommittee says in a special report. It holds that if business remains good next year, any budget surplus should be applied to reduction of the federal debt. Tax reductions may be necessary in a season of declining business, the report says, and only in boom times is there hope to reduce the federal debt.

The merged unions have already launched their new "hard-hitting" drive to unionize industries in which they are notably weak. On the list of those getting attention are the textile, chemical, furniture, paper and shoes industries, as well as "white collar" workers everywhere. Preparations are quite painstaking, but there are some formidable problems, too. Rival unions are not surrendering "rights" they have claimed in the past.

Textile unions which in the past have adhered to A.F.L. or C.I.O., have not succeeded in composing their differences. There are still two textile unions, each unfriendly to the other, and each a rival for full control in the textile field. So far the efforts to persuade them to agree on jurisdiction, or to join together as one group, have been futile.

The merged big union movement has decided to single out individual employers for attacks in setting up a new unionizing drive. Near the top of the list of those to be assailed are the heads of a well-known blanket mill in North Carolina who are charged with "ruthless suppression" of the right to organize. A representation election at these mills was held last March, and the union lost by 1,187 to 730. Under N.L.R.B. rules another election cannot be held before next March.

Organizers are making a "top secret" of the plants and areas against which they will send their 320 "union missionaries." Chief Organizer John Livingston said each man is carefully chosen for his task, and hired only after he has filled out a questionnaire on his background and aptitude. He said each man is being hired because he is a specialist at something or other.

Local union presidents have been called upon to make appraisals of organizing problems, and define types of organizers needed. Regional directors have been called on to define their special problems in detailed reports. Data on existing wage schedules and working conditions in plants that are "objectives" is being prepared for organizers' use by the research agencies of A.F.L. and C.I.O.

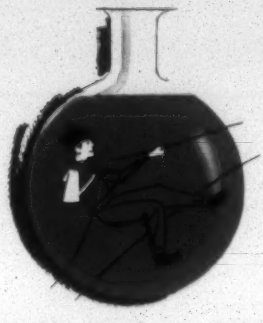
Further cuts in tariffs and expanded grants for technical aid are proposed by a joint Congressional sub-committee on economic policy. The intent, it is declared, is to meet the threat of Communist infiltration in other countries. The report does not indicate how tariff cuts would check Communist infiltration abroad, or do other than destroy job opportunities and increase the number of economically "depressed" areas and localities in this country.

Major fight in Congress on the farm program will be to restore rigid 90 per cent of parity price supports for major crops. But the President is so firmly committed to flexible supports that a veto of this proposal would be certain if it should pass both branches. The veto would not be overcome in the Senate. Various farm proposals will be tacked on to other bills as they come up in the Senate in an effort to forestall a veto.

The Administration has asked Congress to approve Federal grants, loans and other aid to chronically distressed communities. The bill is brought in by Senator Smith (R., N. J.), and is intended to overcome both temporary and chronic unemployment.

*Trade Mark Reg. Pending
†du Pont Polyester fiber

AMACRON RED VIOLET LS



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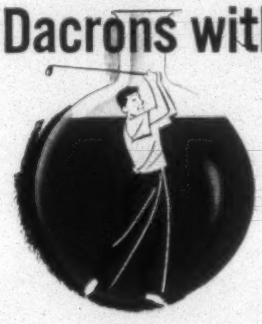

AMACRON BLUE RLS

AMACRON RED BLS

AMACRON YELLOW LS

Here at last is a new range of dyes expressly created for Dacron. After years of intensive research, A.A.P. has successfully perfected a group of new colors offering the fastness properties found most essential in the dyeing and printing of Dacron fabric and yarn.

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For the Textile Industry's Use

– NEW MACHINERY, EQUIPMENT AND SUPPLIES –

Loom Picker Rod Lubricant & Squeeze Slide Applicator

Picker rod lubricant tube screwed into squeeze slide applicator (Garland Mfg. Co.)

Two new products, meeting a long-time need for efficient picker rod lubrication, have been developed by the research laboratories of Garland Mfg. Co. They are an entirely new concept of loom picker rod lubricant and squeeze slide applicator. Garland reports that the picker rod lubricant has exactly the correct amount of tackiness to firmly adhere to picker rods, eliminating mess and waste. For the first time, loom operators can avoid oil drip, excessive friction, overheating and frequent loom stoppage. Said to be equally revolutionary is the time-saving squeeze slide applicator. An exclusive plastic spreader, designed to fit any type of rod, screws on the tube-cap threads. By laying the applicator on the rod, gently squeezing the tube, and drawing over the rod, a thin, even film of grease covers the round rod surface. The squeeze slide applicator requires fewer applications, lasts longer, spreads lubricant quicker. The lubricant is available in packages of 25 tubes, complete with applicators.

(Request Item No. A-1)

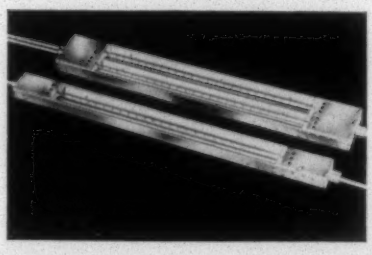
National Diazonium Salt

National Aniline Division of Allied Chemical & Dye Corp. has announced the addition of National Blue 2BS salt to its line of stabilized diazonium salts. It is used to produce, on cotton or viscose rayon, a range of pleasing shades varying from greenish to reddish blue with the various National naphthols. Most of these colors exhibit good fastness to light and hot pressing; very good fastness to washing; and excellent fastness to soda boil, acids, alkalis and rubbing, National reports. The product may be applied on the continuous padding range, in pressure package dyeing machines and in open tubs. It is said to be particularly adapted for printing, and possesses good shelf storage and excellent printing paste stability. Many of the combinations may also be discharged to very good white with hydrosulfite discharge paste. The product is suitable for the production of sport and work clothes, children's play clothes and materials that are to be rubberized. (Request Item No. A-2)

All-Purpose Hose

A new, advanced type of all-purpose hose has been announced by Manhattan Rubber Division, Raybestos-Manhattan Inc. Described as suitable for use with air, oil, water and mild chemicals, the new hose is being marketed under the trade name of Allflex. Allflex is credited with having 8 major advantages, including extremely long life and non-kinking. It is the newest addition to the R/M line of hose, and the first all-purpose hose of mandrel-made, horizontal braided construction. For more complete information, write for Bulletin No. 7075 using this publication's reader service request card. (Request Item No. A-3)

Doyle Infrared Dryers



Infrared dryers with quartz tube heating elements (The J. E. Doyle Co.)

A new Doyle infrared dryer has been developed by The J. E. Doyle Co. incorporating a new General Electric quartz tube heating element. These units come up to heat instantly when the electricity is turned on so that full drying capacity is effective immediately, Doyle reports. The dryers are said to be ideally suited for rapidly drying, treating and conditioning textiles. The dryer is especially effective with synthetic resins which react favorably under high flash heat, as well as impregnating processes using lattices or impregnating compounds. They may also be installed over conveyors or as an integral part of other processing equipment. In addition to reaching maximum heat instantly, the quartz enclosed elements cool off quickly, reducing greatly the fire hazard which otherwise might exist. This is possible because the quartz-enclosed heating element permits most of the energy to pass through the quartz wall without the latter getting extremely hot.

In the above illustration are shown 2 heating element assemblies. These are mounted according to the design of the machine itself. The lower dryer is fitted with 1 G-E quartz element. Its effective heating length is 25". Over-all length of the reflector fixture is 36". It is rated at 2500 w., 400-450 v. The upper dryer is fitted with 2 G-E quartz heating elements mounted in a 36" reflector fixture. Effective heating length is 25". Total wattage is 5,000, requiring 400-450 v. It can be connected to operate at high, medium or low heat. A transformer is required to permit operation at the 450-500 line voltage for both fixtures. It is stated the new quartz heating elements may be assembled for any speed and for any size processing machine where drying function is required. An outstanding installation of the dryers has just been completed in the U. S. Treasury Department where they are used to dry paper money. Multiple automatic heat regulators for control of operating temperatures geared to the speed of the machine, as well as manual controls for various types of work can be supplied.

(Request Item No. A-4)

Damp Sweep Tool

Industrial Wiping Cloth Co. Inc. is now offering a new, improved Legge damp sweep tool, described by the manufacturer as the first cleaning implement specifically created for thorough damp sweeping. The brush, as well as Industrial's line of wiping cloths, is being handled through the nation-wide Texel Service Industrial Launderers which rents the equipment to plants throughout the country. The 20" specially-designed brush is connected to a 5' metal handle by a patented double steel swivel, permitting complete maneuverability. A twist of the handle turns the broom in any direction without the need for lifting it from the floor. A 36" cotton cleaning cloth with taped center hole fits over the handle, around and under the brush. The cloth can be washed and used over and over.

(Request Item No. A-5)

Selvage Uncurler

A new type of Hetherington selvage uncurler which automatically adjusts the position of its spirals to the tightness or looseness of the cloth and selvages is being offered by the Guider, Roll and Service Co. The new uncurler has 2 spirals which fit before and behind the cloth. The spirals revolve as the fabric goes through them. The spirals are undercut and have a thin edge for getting under the turned or curled selvages. Hardwood or spirals of a special grade of rubber can be furnished. The spiral shafts are attached to a plate which is pivoted in the center. An adjustable counterweight keeps the correct tension on the cloth at

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Shown below is head end of Roberts Model 55R High Draft Spinning Frame.

AVAILABLE IN THE FOLLOWING FORMS:

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- **REDUCED ENDS DOWN**
- **INCREASED SPINDLES PER OPERATOR**

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

FOR THE TEXTILE INDUSTRY'S USE—

all times. Guiders are usually used ahead of uncurlers. The new type uncurlers can be attached beneath any air or electric guider. They also can be supplied with brackets for use where they are not attached to guiders. When attached they in no way interfere with the function of the guider, the manufacturer points out. Stands with cross-screws and hand-wheels similar to guider stands might be required in some places. These can be furnished.

(Request Item No. A-6)

Abrasives Polishing Kit

To meet the need for every manufacturer to test and demonstrate Cratex rubberized abrasives on actual deburring, smoothing and polishing operations, Cratex Mfg. Co. has developed a comprehensive, yet inexpensive, polishing kit. This kit contains an assortment of 24 of the most popular Cratex polishing wheels, cones, blocks and mandrels used in industry and complete instructions for efficient application of Cratex rubberized abrasives.

(Request Item No. A-7)

Metlon Combination Yarn

Metlon Corp. has introduced a new combined yarn incorporating Metlon and Du Pont's thick and thin rayon. The rayon is made in 1100 and 2200 deniers to create a richly textured Doupioni effect. It may be combined with either standard quality Metlon or Metlon with Mylar. Said to be extremely luxurious in appearance, the combined yarn is especially suitable for drapery and casement clothes, Metlon reports. It will also add a new dimension to wearing apparel goods, notably in fabrics designed for skirts, jackets and stoles. Metlon points out that since both yarns have excellent dye characteristics, an extremely wide range of color choices is possible for every use. The combined product may be used either in the warp or filling, making it possible to achieve innumerable textured effects, it is said. Of special interest is the fact that the metal runs parallel to the rayon.

(Request Item No. A-8)

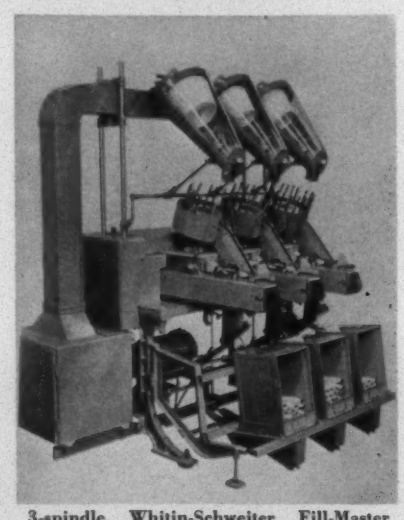
High Colorfast Ratings Given Courtaulds Colors

Courtaulds (Alabama) Inc. has announced that 8 of its Coloray colors, out of a range of 19, are now colorfast to light up to at least 500 hours of direct exposure to the sun, according to independent tests conducted by South Florida Test Service on Courtaulds' solution-dyed rayon staple. The colors are slate grey, silver grey, tan, peacock blue, turquoise, terra cotta, medium brown and black. No other textile colors in such a wide range are known to claim this exceptionally high degree of colorfastness, Courtaulds reports, adding that this new record goes beyond any known measurement for colorfastness, including the highest standard set by the American Association of Textile Chemists & Colorists, which is Class L8 or 320 hours' sun exposure.

Courtaulds further states that one Coloray color, hunter green, is in Class L8 after sun tests both direct and under glass. Six colors —dark blue, malachite green, Indian yellow, red, dark brown and sulphur yellow—are in Class L7 (160 hours) as a result of direct sun tests, and 4 of these colors—dark blue, malachite green, Indian yellow and red—reached Class L8 (320 hours) after tests under glass, Courtaulds said. The 4 other colors in the Coloray range, medium blue, apple green, pink and light blue attained a rating of L6 (80 hours) after direct exposure tests. Three of these colors—medium blue, apple green and pink—were given an L7 rating after 160 hours of exposure under glass. Light blue, normally noted for fading, earned Class L6 in tests under glass, a rating considered by the trade as exceptionally good, Courtaulds points out.

(Request Item No. A-9)

Whitin Filling Winder



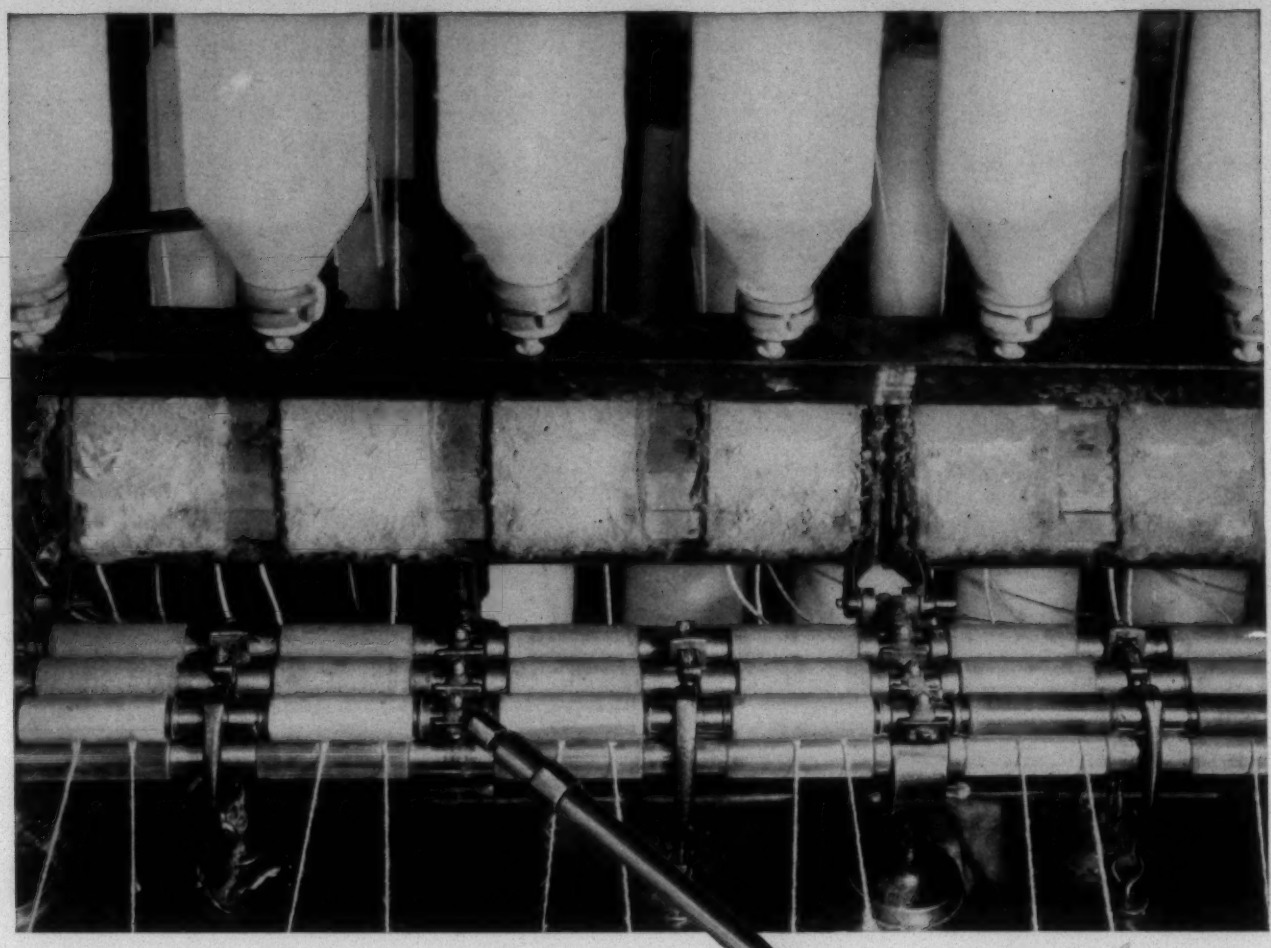
3-spindle Whitin-Schweiter Fill-Master winder (Whitin Machine Works)

Whitin Machine Works has announced a new automatic filling winder, the Whitin-Schweiter Fill-Master. The new addition, complementing the widely used Whitin-Schweiter Model MS and the recently introduced Whitin Speed-Matic, makes available to all segments of the textile industry a Whitin-built filling winder, specifically designed to meet the exacting requirements of winding operations in each area, Whitin points out.

The new machine will be manufactured by Whitin under license from Schweiter Ltd., Horgen (Zurich) Switzerland. The H. J. Theiler Corp. of Whitinsville, Mass., and Spartanburg, S. C., will act as a selling agent for the new machine in U. S. and Canada to assist Whitin in its distribution.

The Fill-Master winder reportedly has many new features. Among fully automatic winders it is said to be unique in having a dust exhaust system for every winding position, resulting in dust and dirt free conditions around the winder. Bobbins are tailless wound, eliminating scissors and tail cutters. An unusual mechanism for differential binding of the yarn layers produces firmly wound bobbins with a minimum of tension for avoidance of sloughing in the shuttle. Depending upon the type of yarn run and the bobbins used, the winding

WON'T DRIP!



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TEXTILE LUBRICANTS

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unit will run at spindle speeds up to 10,000 r.p.m., Whitin reports. Versatile and adaptable to a wide range of winding conditions with economical production costs, it is designed to wind any type of yarn—cotton, wool, worsted or synthetics—from coarse to fine counts. When different yarns are run, the tension is the only element that has to be adjusted. Bobbins made are uniformly parallel. The spindle speed is adjustable on each individual winding position and covers a wide range of speeds. The winder can be adjusted to wind bobbins up to 10⅛" in length. Bobbin diameter can be adjusted by a simple positive control.

According to Whitin, the winder is virtually completely automatic in operation. It can be equipped with a high-speed bobbin loader, supplying up to 60 bobbins per minute, and filled bobbins can be either dropped on the pin boards underneath each individual winder unit or can be automatically packed into a loom box under each unit. Machine cleaning is said to be materially reduced by the efficient dust exhaust system and maintenance is consequently reduced to very low levels.

(Request Item No. A-10)

Antistatic Finish

Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp., has announced the development of a durable antistatic treatment for synthetic textiles. The new finish is called Niatex antistatic AG-2. It is believed to be the first commercial antistatic finish that can be said to be durable both to repeated launderings and to repeated dry cleanings. The finish, a complex vinyl-type of compound, is said to be easy to apply. No catalyst or high-temperature curing is required. It is merely diluted with water and applied to the fabric by padding or spraying. The finish is described as a viscous white-to-light amber liquid. It is shipped as a water solution and can be mixed with water or any of a wide variety of organic solvents and may be of use in applications employing propellants.

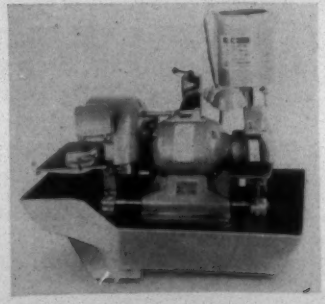
The new finish is also compatible with many types of resins, water repellents, stiffening agents and softeners. The antistatic durability of various combinations of finishing materials with AG-2 varies somewhat, so tests must be made in specific cases, the manufacturer points out. The finish is most effective on fibers with irregular cross-sections. Thus, it is difficult to remove from Dynel except in hot alkaline solutions. On Saran it reportedly withstands long abrasion tests, but will not withstand scouring. It is effective on Orlon and is being used on Dacron tricot, primarily to improve the fabric hand. (Request Item No. A-11)

Plastic Salt Dissolvers

The first successful fabrication of plastic salt dissolvers and brine storage tanks has been announced by the International Salt Co. The plastic brine units are described as another "first" in the brine-making field for International Salt. In the early '20s International developed the first rock salt dissolver, the Lixator, which produced pure, fully-saturated brine from economical rock salt. According to the company, the Lixate process has modernized methods of salt handling, storage, brine-making and distribution in practically every brine-using industry in the country. Several advantages are gained by using plastic for the new Lixators, evaporated salt dissolvers and brine storage tanks. The plastic units completely eliminate corrosion problems. They need no paint. Because they are translucent, the true salt level is visible from any position around the units, International points out.

(Request Item No. A-12)

Safe Bench Tool Grinder



Bench tool grinder (Scheer Grinding Co.)

A new type of bench tool grinder, consisting of a large base pan holding from

Stehedco GYROTEX*

Textile Bobbins

THE QUALITY IS BUILT RIGHT IN

- HAS THE SMOOTH BALANCE OF A GYROSCOPE
- PERFECT CONCENTRICITY WITH THE SPINDLE
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GYROTEX* MEANS THE VERY BEST BOBBIN THAT IS ENGINEERED BY TEXTILE SKILL FOR EXACTING TEXTILE NEEDS

ALL METAL STRUCTURAL CORE
FINEST BUSHINGS FOR SPINDLE CARE
TOUGH HEADS AND BARREL
PRECISION DIMENSIONS WITH UNIFORMITY
FINISH THAT QUALITY YARNS DESERVE

RIGID CONSTRUCTION PREVENTS TRAPPING
ENGINEERED FOR STEAMING
ALL TYPES AND SIZES AVAILABLE
TWISTERS, WINDER-SPINNERS, PIRNS
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***GYROTEX NAME AND CONSTRUCTION PATENTED**

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1-5-1

FOR THE TEXTILE INDUSTRY'S USE—

7 to 10 gals. of coolant, has been announced by Scheer Grinding Co. The grinding motor, a Diehl loom-type unit, is ½ h.p. and also drives the coolant pump that delivers a constant flow of water controlled by a ⅛th" valve into a special turbine flange. This clamps and centers the bore of the wheel on the extended motor spindle. The machine is lightweight, semi-portable, useful for offhand tool grinding, especially on cemented carbide-tipped tools. It is equipped with a 7" straight grinding wheel on one side of the spindle and a 6" cupped wheel on the other. It is said that the machine, because of its singular method of driving the coolant through the center of the grinding wheel and spinning it out by centrifugal force onto the work, permits faster and safer tool sharpening. Flying particles are directed into the coolant reservoir instead of outward.

(Request Item No. A-13)

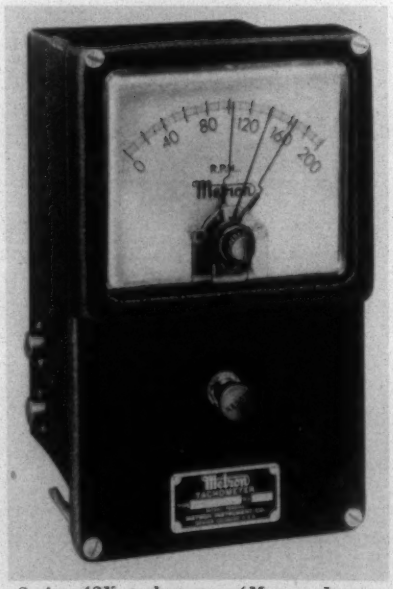
Tranter Platecoils

A 50% increase in pressure rating for 2 styles of Platecoil heat transfer units has been announced by Tranter Mfg. Inc. Tranter Platecoils consist of embossed sheets of metal welded together (or to a flat companion plate) to form channels for passage of heating or cooling media. Pressure ratings have been increased for 2 styles of header-type, double-embossed units. The units now are offered for use up to 150 lbs. maximum operating pressure; previous maximum recommended by the manufacturer was 100 lbs. Reasons cited for the increase include improved engineering and factory control and fabrication.

The increased rating retains the 1 to 4 factor of safety between maximum operating pressure and rupturing pressure, Tranter points out. Laboratory hydrostatic tests of Platecoils taken from the production line consistently have proved the rupturing pressure for the double-embossed, header-type Platecoils to be 600 lbs. or more. This safety factor is specified in the A.S.M.E. code for unfired pressure vessels and also in the A.P.I. code. Neither of these codes applies specifically to Platecoils, but the manufacturer has used these codes as a guide in rating its product. The pressure limitations apply to Platecoils made of cold rolled steel and the various alloys in which they are available. For single-embossed, header-type units, a maximum operating pressure of 70 lbs. is recommended. For serpentine-type Platecoils, maximum operating pressures recommended are 200 lbs. for double-embossed, and 125 lbs. for single-embossed. The increased rating for the double-embossed, header-type units broadens the application potential of the Style 70 and 90 Platecoils.

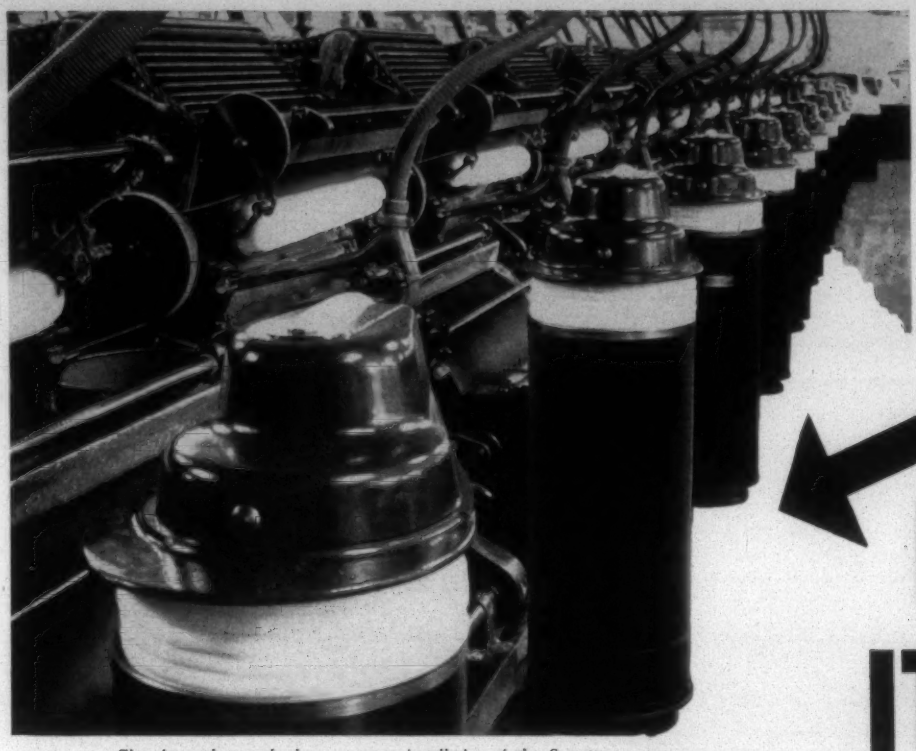
(Request Item No. A-14)

Metron Tachometer



Series 42X tachometer (Metron Instrument Co.)

Metron Instrument Co. is offering a new model tachometer, Series 42X, that not only indicates speed, but actuates self-contained power relays that signal overspeeds and underspeeds. It is said to be ideal for use in sounding alarms, turning on light signals, stopping or starting equipment, opening or closing valves, controlling speeds or for many other similar applications. High and low limit pointers are independently adjustable. These pointers act as a single-pole double throw switch with the regular speed pointer acting as the switch center arm. A



The above photograph shows a recent installation of the Gossett economy change-over, equipped with Gossett's big new coilers with anti-friction bearings. Size of coiler shown is 16" x 36".

HERE IT IS!

Gossett's big coiler for 1956

Gossett Machine Works pioneered the big coiler conversion technique. Now Gossett master technicians have developed a big new coiler . . . bigger and better than ever.

The Gossett Machine Works has been serving textile mills for more than a quarter of a century. So it is not surprising that Gossett technicians have developed a practical, sure way to greatly increase the amount of sliver per can . . . . . and do it at a moderate cost. In fact, more than 100 Southern mills have already installed a complete Gossett coiler conversion. Upon written request, we will be glad to give you the names of these mills.

WHAT WE DO WITH COILERS

1. We convert 10" and 12" card coilers to 14" through 18" in diameter and 36" to 42" in height.
2. We convert either single or double-head 10" and 12" comber coilers to 14" and 15" in diameter and 36" to 42" in height.
3. We manufacture parts for all sizes and makes of coilers.
4. We manufacture completely new coilers to meet your specifications . . . . all heights and sizes. Choice of sleeve or anti-friction bearings.

Get Cost of the

Gossett Economy Package on Conversion

We will be glad to give you the cost of a change-over, using our economy package plan which

1. Saves your present pedestal.
2. Allows for all new parts applied to the pedestal . . . . plain or anti-friction bearings.
3. Assures you of all machine finished gears.

B. W. GOSSETT
President

E. C. MASON
Sales Manager

D. W. SMITH
N. C.-Va. Representative

GOSSETT Machine Works, Inc.

GASTONIA, NORTH CAROLINA

manual reset push button is used to reset the tachometer after the relays have signalled a high or low speed. The tachometer is available with any one of 48 different scales, marked in any rate such as r.p.m., f.p.m., etc. (Request Item No. A-15)

Interfloor Conveyor

A fast tray-type interfloor conveyor that automatically loads, transfers and delivers heavy loads between as many as six floors has been announced by Gifford-Wood Co., a leading manufacturer of interfloor handling systems. G-W reports that the new system moves loads twice as fast as any other conveying method used for the same job. The first installation to use this system estimates it is now saving $25,000 a year in handling costs.

Resembling an elongated ferris wheel in its transfer sequence, the fully automatic system consists of: a tray-type elevator conveyor, with trays spaced 25′ apart between 2 parallel roller chains; loading and unloading entrances at each floor, on opposite sides of the conveyor shaft; safety fire doors, side-sliding or up-sliding, at each entrance; automatic loading and unloading "fingers" at each station; and a complete set of operating and safety controls. In operation, trays pick up loads from entrances on one side of the shaft, carry them over the top and down to the predetermined discharge station on the other side of the shaft. Trays move at a speed of 48 f.p.m., driven by a hydraulic electric unit housed at the top of the shaft.

In order for the conveyor to operate, only one door on the load side and one on the unload side may be open. When ready to start transfer sequence, operator at the unload station pushes a signal button indicating that unload fingers are in receiving position. At the loading station the operator pushes the start button, which moves the conveyor tray into loading position. Loading fingers automatically move the load onto the tray. The loaded tray then moves up the shaft, over a series of chain sprockets at the top of the shaft and down the other side. Unload fingers at delivery point are in receiving or DOWN position; all unload fingers at other floors must be in UP position. Load is removed from tray and deposited on platform at designated unload station. An electric eye mechanism at each unload station prevents pileup of loads at platform; if passage is blocked by other loads, the electric eye stops the movement of the elevator and prevents unload until passage is cleared.

Push button stations at each operating floor are equipped with start buttons, red pilot light and indicator lights showing the position of unload fingers at each floor—green for up, red for down. An emergency safe-run switch at each floor can stop the entire transfer sequence at any point. Limit switches are installed on doors at each loading point and on loading fingers to insure exact loading and smooth transfer sequence. (Request Item No. A-16)

For the Mill Bookshelf

Variable-Speed Drives

Reliance Electric & Engineering Co. announces the release of a 4-page bulletin, *How To Care For Jr.*, describing and illustrating the simple but comprehensive program available to keep Reliance V*S Jr. drives in operation at peak efficiency. The bulletin explains the complete line of services and parts available for these electronic variable-speed drives. It is explained how a preventive maintenance program may be set up in relation to such factors as the number of units in operation or the specific type of operations. Information in the bulletin also includes a complete listing of parts and prices, and instructions on how the various plans may be put into effect.

(Request Item No. A-17)

General Dyestuff Circulars

General Dyestuff Co. announces the release of 2 new bulletins—G-791, Celliton Fast Blue Lafr and G-792, Rapidogen Black J. Celliton Fast Blue Lafr, the bulletin reports, occupies a significant place among Celliton dyes as a fast-to-gas-fading blue for acetate. Dyeings are characterized by very good fastness to sunlight and by high resistance to dry cleaning, hot pressing and perspiration. It is also especially recommended for dyeing fast shades on Dacron polyester fiber and it may be employed likewise by suitable dyeing methods for dyeing fast shades on acrylic fibers, such as Orlon, Dynel and Acrilan. Navies and Kersey Greens are examples of deep shades that are being dyed on Dacron and Dynel by recipes containing this blue.

Rapidogen Black J is a new stabilized azoic composition in powder form especially developed for printing jet blacks on cotton and rayon that are adequate in general fastness properties for dress goods. It is characterized by unequalled strength and thus by exceptional economy where full blacks are required, the bulletin points out. Copies of the bulletins can be obtained by using this publication's reader service request card.

(Request Item No. A-18)

Safe Chlorine Handling

Diamond Alkali Co. is offering a wall chart on safe chlorine handling and storage providing 50 successful suggestions for safely handling and storing chlorine in 100-lb. and 150-lb. cylinders and ton containers. The chart (17″ x 23″) is printed in 2 colors on specially coated, linen-backed stock, tinned on top and bottom with 4 metal eyelets for convenient wall hanging. It presents safety recommendations covering storage, handling and use of chlorine and protective practices and equipment. Space is also provided for listing telephone numbers for emergency calls. (Request Item No. A-19)

Determining Truck Costs

How to Figure Your Industrial Truck Costs is the subject of a 4-page folder now available from The Elwell-Parker Electric Co. The free literature, a reprint of a feature article, covers the 2 most important phases of cost investigation: the cost of truck ownership and truck operation. With such factors in mind, information is then offered on methods for lowering operating costs. One page is devoted to a cost checklist which contains 16 points that must be considered in such an evaluation. Under the truck operating section of the checklist are such points as original cost of truck, allowance for yearly charge-off, cost of accessory equipment, cost of maintenance department, etc. Under truck ownership cost factors are listed gas or electricity; oils, lubricants, hydraulic fluids; operator(s) wages, wages of supervision, etc.; maintenance cost of pallets, skids, containers, etc.

(Request Item No. A-20)

Nopco Products Bulletin

The Nopco News, the first of a series of quarterly product bulletins, has been issued by the market development department of the Nopco Chemical Co. The bulletin is devoted to new Nopco products developed for a specific market, but having widespread applicability to other industries.

(Request Item No. A-21)

Carloading Check Chart

Signode Steel Strapping Co. is offering a carloading check chart for anchored loads. The chart is designed for shipping room and loading dock personnel. It provides a clear, simple, illustrated chart on carloading procedures for wall-anchored loads. The wall chart includes instructions for preparing the car, wrapping anchor plates, draping the car, bulkhead construction and use of strapping tools.

(Request Item No. A-22)

Glass Fibers Catalog

A new catalog with a complete, condensed explanation of its many products and their applications is being offered by L.O.F. Glass Fibers Co. The catalog describes and

NEED  ?

LIKE **further information about new products described in "For The Textile Industry's Use" section of this issue?**

★

WANT **copies of free literature listed in "For The Mill Bookshelf" section?**

★

DESIRE **additional facts relative to current advertisements or technical articles?**

★

FIND **that TEXTILE BULLETIN is useful to you in your work, and that you would like a regular subscription for yourself or others in your plant?**

★

USE **the attached cards for a prompt reply to your requests — no postage required.**

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textile bulletin

P. O. Box 1225
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EASY AS ABC!

PLEASE PRINT—— JANUARY 1956

Please send additional information on new equipment and/or literature described in this issue of TEXTILE BULLETIN (give Key Numbers)

_____

_____

Please send more information about (list advertisements or articles, along with page numbers) _____

_____

Name _____ Position _____

Company Name _____

Address _____

City _____ State _____

— READER SERVICE —

PLEASE PRINT—— JANUARY 1956

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Company Name _____

Address _____

City _____ State _____

— READER SERVICE —

PLEASE PRINT—— JANUARY 1956

Please enter the following subscription to TEXTILE BULLETIN for a period of_____one year

_____three years

(Bill will follow:
1 yr., $1.50; 3 yrs., $3)

Your Name _____ Position _____

Mill's Name _____

Your Mailing Address _____

City _____ State _____

— SUBSCRIPTION CARD —

LIKE **further information about new products described in "For The Textile Industry's Use" section of this issue?**

★

WANT **copies of free literature listed in "For The Mill Bookshelf" section?**

★

DESIRE **additional facts relative to current advertisements or technical articles?**

★

FIND **that TEXTILE BULLETIN is useful to you in your work, and that you would like a regular subscription for yourself or others in your plant?**

★

USE **the attached cards for a prompt reply to your requests — no postage required.**

illustrates uses of the company's Microlite and Super-Fine blanket insulations for thermal and acoustical treatments. In addition, it has references to such diverse topics as Microflex compressed board, a resilient cushion material; quartz and glass Micro-Fibers, reinforcements for plastics and yarns for the textile industries. The new catalog is designated as Form WPD-11.

(Request Item No. A-23)

Coal Dust Control

Wheelabrator Corp. has published a new booklet on the control of dust from coal handling operations. It discusses the use of local exhaust ventilation and cloth-tube-type dust collectors. This method is applicable to such operations as the conveying and preparation of coal for burning in textile plant or power plant furnaces and boilers; the conveying, screening, crushing, weighing and batching of coal in chemical processing; etc. Four illustrated case histories are presented. Some diagrams of materials handling systems and how dust control is exercised in them are also presented.

(Request Item No. A-24)

Flexaust Hose

The Flexaust Co., manufacturer of Flexaust hose and Portovent duct, has available a complete industrial price list featured in a 6-page illustrated bulletin. The literature also lists and pictures a number of the features of the two products, giving data designed to help in determining and ordering the correct type of hose and duct for particular applications. Flexaust hose and Portovent duct are widely used for moving air, dust, fumes and materials by pressure, suction or gravity.

(Request Item No. A-25)

Combination Comber-Drawer

Stellite American Corp. is offering a 4-page pamphlet describing the Tematex Super Intersector manufactured by A. Carniti & C. of Italy. The pamphlet points out that the Tematex Super Intersector has been designed so that it is suitable both for combing and drawing operations. It will reportedly work any fibers suitable to be processed according to the worsted system. The machine can be used for all combing and recombing passages and for the first 3 or 4 drawing passages in the French system as well as in the American system.

(Request Item No. A-26)

Adamstop For Roving Frames

Adams Inc. is offering a 4-page illustrated folder describing the Adamstop stop motion for roving frames. The literature points out that Adamstop provides: (1) complete protection at all points; (2) greater protection; (3) better quality—from 10 to 30% fewer ends down in spinning; (4) no doublings; (5) instant action at the points where defects occur; (6) increased work assign-

ments; and (7) lower costs in buying, installing and maintaining. The folder also points out that Adamstop does not affect doff methods or increase doff time; it will not stop frame on bobbin traverse change; and it requires no extra floor space. Cost analysis figures are given showing a 72% annual return on initial investment.

(Request Item No. A-27)

Cyclohexanol

Cyclohexanol, an intermediate and component of solvent systems, is the subject of a revised technical data sheet recently published by the organic chemicals division of Monsanto Chemical Co. The data sheet illustrates such typical reactions of the compound as ester formation, dehydration and oxidation to cyclohexanone and adipic acid. The major uses of cyclohexanol are for specialty products such as cleaners, solvents and specialized soaps.

(Request Item No. A-28)

Vibration Control Material

Isolant, a complete line of vibration control material, is described and illustrated in a catalog released by T. R. Finn & Company Inc., specialists in shock and vibration control. Isolant is recommended for massive, difficult-to-isolate machinery because it provides effective isolation of the combination of vibration, shock and noise, due to its high structural strength and resiliency. The catalog describes the granular structure of Isolant, which is made up of millions of hermetically-sealed minute air cells that expand or contract in accordance with the

NEW DRESS FOR AVISCO—Cartons like these being checked on the Avisco cellophane shipping platform in Fredericksburg, Va., will be showing up soon in customer plants. The old familiar green and black colors of the Sylvania Division of American Viscose Corp. are being retained on both the pallet covers and the individual cartons.

FOR THE MILL BOOKSHELF

applied load, thereby "floating" the machinery on a cushion of air. This elasticity reportedly provides effective vibration isolation. Detailed descriptions of the typical installations are given, as are proper methods of installation. Isolant types, load ranges, standard sizes and thicknesses with suggested specifications and the Finn engineering services also are included.

(Request Item No. A-29)

General Industrial Catalog

A new and colorful catalog has been published by the General Industrial Co. Many new items have been added to General's standard line consisting of steel shelving, lockers, storage cabinets and intercommunication systems. Offered in a wide variety of sizes and capacities are the plastic drawer cabinets which are ideal for small tools, nails, etc. Each item is clearly illustrated and priced.

(Request Item No. A-30)

Rubber Lining Catalog

A new catalog of corrosion, abrasion and contamination-resistant rubber linings for tanks, pipe, valves and similar storage and process equipment has been issued by Manhattan Rubber Division, Raybestos-Manhattan Inc. It is generously illustrated and

Industry Here Finds Savings in the Stars

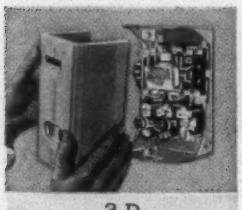
Cutler-Hammer Three-Star Motor Control

Thousands of electric motor users now know the three silver stars on the nameplates of the new Cutler-Hammer Three-Star Motor Control are no meaningless decoration. They stand for three entirely new standards in motor control value and performance . . . for important practical economies no industrial plant can afford to ignore.

Compare Cutler-Hammer Three-Star Control with all other control and *see* the difference. It installs easier . . . so much easier that savings in installation costs often pay for this control. It works better . . . so much better that this control often pays for itself many times over just by the production interruptions it avoids. It lasts longer . . . so much longer that this control *never* requires maintenance care or cost in all normal use. Make your own comparisons and *know*.

Your nearby Cutler-Hammer Authorized Distributor is stocked and ready to serve you. Order from him today. CUTLER-HAMMER, Inc., 1455 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
☆ ☆ ☆
MOTOR CONTROL
C-H



3-D Accessibility

Removing the wrap-around cover bares the entire starter for three-directional accessibility. It is wide open at front and both sides. You can see everything and reach anything. Wiring the starter is so simplified and complete inspection is so easy no detail is ever neglected.

Unit Panel Construction

The entire starter mechanism can be removed from its case by simply loosening three screws. With mechanism out of the way, mounting case, connecting conduit and pulling wires is a cinch. A great time saver. No skinned knuckles. No damaged starter mechanisms.

Full Three-Phase Protection.

Only *three* overload relays can provide positive three-phase protection to stop needless motor burn-outs and production interruptions. And only Cutler-Hammer offers three overload relays in standard starters to avoid the costs and delays in special construction.

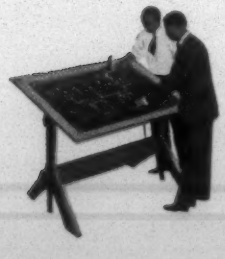
Adjustable Overload Coils

Only the accurate adjustment of overload protection permits motors to work harder without damage. Now more important than ever with newer type small frame motors. Adjustable overload coils here provide an accuracy of 3% instead of 10% to 12% in other makes of control.

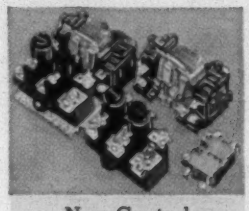
Superlife Vertical Contacts

Now the famous Cutler-Hammer dust-safe vertical contacts have been doubly improved. New light-weight design cuts bounce to reduce arcing. Also, arcing is now pressure-quenched. Contact maintenance care and costs are ended for all time in normal control uses.

For Control Panel Designers

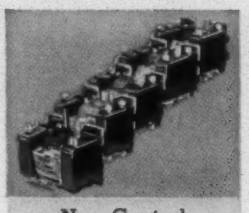


New Cutler-Hammer Three-Star Motor Control is star-studded with exclusive new features that provide opportunities for better circuit planning, for compact control panels, for better motor protection and better control performance. Write now on company letterhead for panel design handbook giving complete data.



New Control Components

All parts of the Three-Star Starters in NEMA Sizes 0, 1 and 2, as well as the complete starters on convenient unit panels, are available as components. Electrical interlocks provide additional control circuits as needed.



New Control Relays

Finest of control relays. 10 and 15 Amp. 2-3-4-5-6 poles. All contacts instantly convertible from NO to NC or vice versa. NO or NC status seen at a glance without removing cover. New armored coils color coded for voltage and frequency.

New Oil-Tight HD Pushbuttons

Amazingly compact, one-hole mounting, oil-tight, heavy-duty pushbutton units. Wide choice of button types and colors. Easily added additional contacts permit almost unlimited circuitry. Selector switches and indicating lights to match.

contains many useful charts, tables and diagrams. Although not intended as an exhaustive discussion of the subject, the catalog (No. 7115) contains helpful suggestions for effecting economies in the bulk handling of chemicals, and a complete guide for the proper selection of lining for use with a wide variety of acids, alkalies, plating solutions and abrasive compounds.

(Request Order No. A-31)

How To Hire Office Personnel

Martin Publishing Co. is offering a free booklet that points out some important steps to follow in hiring office personnel. Steps discussed include recruiting, screening, testing, reference checking and interviewing. Going carefully through these 5 steps does not guarantee a winner, the booklet points out, but it does give the feeling that all that can be done has been done to hire the right person for the right job.

(Request Order No. A-32)

Strengthening Management For The New Technology

(Published by the American Management Assn., 1515 Broadway, Times Square, New York.; General Management Series 178; 64 pps.; $1.75)

The accelerated pace of industrial growth requires that increased attention be paid to the impact of technological change on all areas of management. The implications of new developments are particularly significant when the organizational and human aspects of management are considered. This new publication discusses 3 phases of the new technology: developing patterns in company organization, management development during a period of industrial and social change; and the impact of automation on company organization and on managerial problems.

Britain Views Our Industrial Relations

(Mark J. Fitzgerald, C.S.C.; University of Notre Dame Press; $4.25)

The findings in this study are based primarily on an analysis of over 60 reports of select British union-management teams which visited their counterpart industries in this country. The author gleaned many significant points for his book from personal interviews with team members in England. Topics discussed include management policy on industrial relations, the role of unions in American industry, wage standards in America and methods of income distribution. The author is associate professor of economics at the University of Notre Dame and chairman of Notre Dame's annual Union-Management Conference.

Textiles & Testing Course Of Study

(United States Testing Co. Inc., 1415 Park Ave., Hoboken, N. J.; 96 pps.; $2.75)

The second edition of *Textiles & Testing Course of Study* is now available from the United States Testing Co. The book is presented in outline form, well illustrated with sketches, photographs and sample test reports. In addition, there are 16 swatches covering the basic weaves. The major chapter headings are: Introduction to Testing; Raw Materials of the Textile Industry; Yarn Manufacturing and Testing; Fabric Manufacturing and Analysis; Hosiery Testing; and Chemical Tests on Fabrics and Dyestuff Analysis. The raw materials section has been enlarged to include the most up-to-date fiber and yarn information available at the time of printing. The new wool grade standards and recommended standard textile regains have been included. The flammability unit has been revised in accordance with the federal flammable fabrics act.

Serving The Textile Industry

Charlotte Leather Belting Merges With Schachner

Schachner Leather & Belting Co., Charlotte, N. C., has announced the purchase of Charlotte Leather Belting Co., and the subsequent merger of the 2 companies as of Jan. 2. J. L. Harkey, vice-president of Charlotte Leather Belting, continues in an executive capacity with the merged firms. Schachner recently moved into a new plant which provides adequate space to receive the office and equipment of its new division.

The Texas Co. Opens Atlanta Service Office

The research and technical department of The Texas Co. has opened a regional office in Atlanta, Ga., to expand its specialized service to the Southern textile industry. The new facility is located at 873 Spring St., N. W., and is under the direction of J. F. Collins Jr. The expansion will enable the company to provide a versatile and extensive program of fuel and lubrication services to the Southern area.

Office Space Enlarged By Ideal Industries

Ideal Industries Inc. and Ideal Machine Shops Inc. of Bessemer City, N. C., broke ground Dec. 15 for their fourth expansion of office space since 1951. The new structure will more than double Ideal's present administrative office space. Ideal Machine Shops office and the Ideal engineering department will remain in their respective buildings. The laboratory and pilot plant will be expanded and moved from its present separate building to new quarters in the Ideal Industries building. The new office is scheduled for completion Feb. 1.

Cocker Machine & Foundry Representing German Firm

Cocker Machine & Foundry Co. of Gastonia, N. C., has replaced H. W. Butterworth & Sons Co. of Bethayres Pa., as Southern sales representative for textile finishing machinery made in Germany following Butterworth's acquisition by Van Norman Industries Inc. Cocker will handle sales of equipment made by A. Monforts, Maschinenfabrik. The arrangement also includes Texplant Corp. of Stamford, Conn., machinery importers. The original agreement between Butterworth, Monforts and Texplant was made in February 1955.

Sandoz Chemical Works May Build Charlotte Branch

Sandoz Chemical Works Inc. is considering construction of an office, laboratory building and a warehouse at Charlotte, N. C. Cost of the project would be in excess of $400,000, it is said. Preliminary plans call for a main building to contain 5,100 sq. ft. of office space and 5,600 sq. ft. of laboratory space. A basement area of 5,600 sq. ft. beneath the laboratory would be used for boiler and air conditioning equipment and storage. The warehouse building would have about 21,100 sq. ft. of space. The buildings would be located on the old Monroe Rd. just inside the city limits. Construction would require more than a year. The company's branch office in Charlotte is at 1510 Camden Rd.

Felters Co. To Build New $350,000 Plant

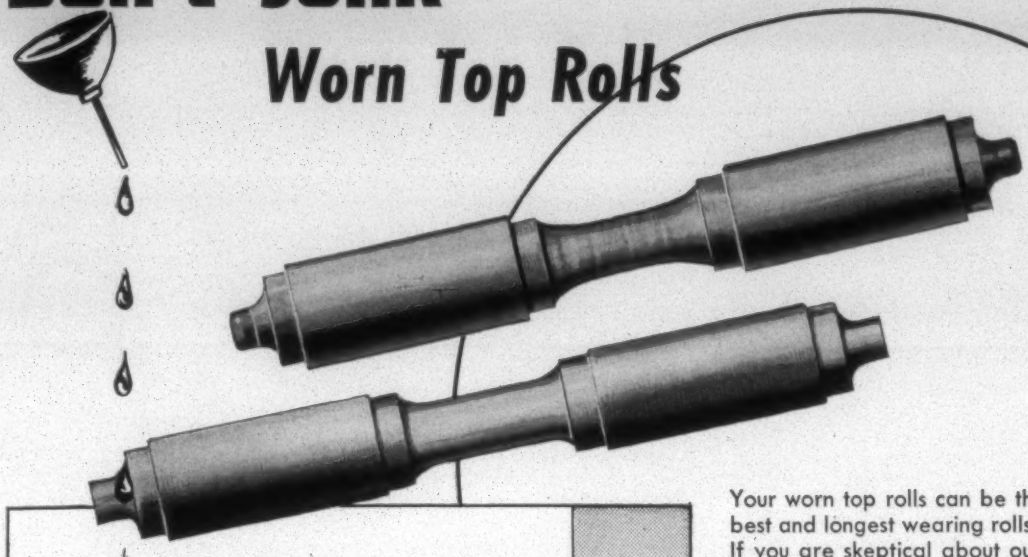
The Felters Co. of Boston, Mass., manufacturer of pressed, nonwoven felt, has announced plans to build a new $350,000 plant for the production of its recently introduced felt-like fabric Allfab. Allfab is a composition of textile fibers manufactured by a special process which involves the use of a resin binder.

Clinton Foods To Sell Corn Products Division

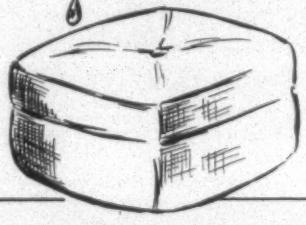
Assets of the corn processing division of Clinton Foods Inc., Clinton, Ia., will be sold to Standard Brands Inc., according to terms of a sales agreement announced re-

Don't Junk

Worn Top Rolls

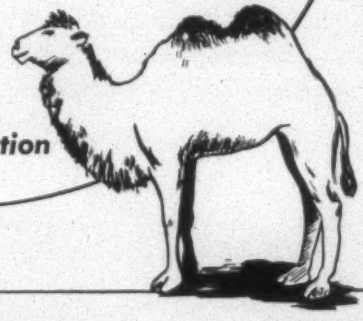


Ideal Specialloy surfaces have a cushioning action . . . tough—but oh so gentle . . . on saddles and cap bars.



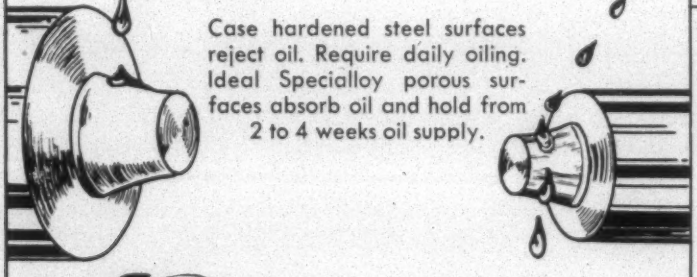
Your worn top rolls can be the basis for the best and longest wearing rolls you ever used. If you are skeptical about our "better-than-new" claims for Ideal Specialloy Reconditioned Top Rolls, here are some things we can prove.

Goes Weeks Without Attention



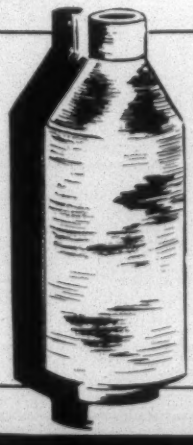
RETAINS OIL

Case hardened steel surfaces reject oil. Require daily oiling. Ideal Specialloy porous surfaces absorb oil and hold from 2 to 4 weeks oil supply.



SPECIALLOY SAVES MONEY

Specialloy Reconditioning means longer life for top roll assemblies, less oiling labor, and sharply reduced seconds . . . a worthwhile net saving to you.



NO OIL SPOTS

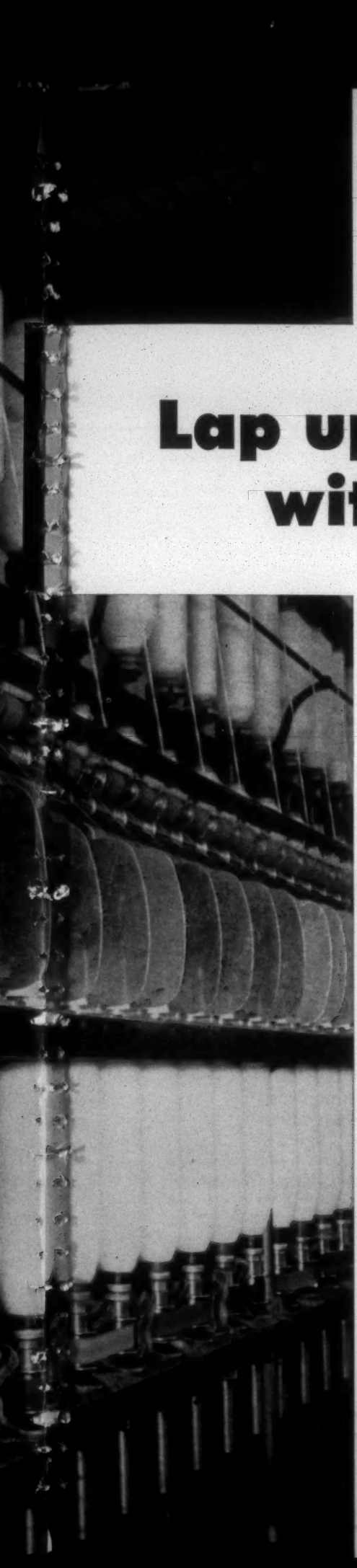
The oil stays on the Specialloy bearing parts and off of the yarn. Oil seconds are practically eliminated.

Don't junk your worn top rolls. Let us show you why Specialloy Reconditioning will give you the best top rolls obtainable. Let us recondition a half dozen of your worn rolls to prove our claims.

Ideal Machine Shops, Inc.

Bessemer City, N. C.

Continuous Service to Textile Mills Since 1924



Lap ups reduced 4 to 1 with DAYCO cots

That's the record for one southern mill* after extensive tests of Dayco Cots. Regardless of weather—hot, cold, muggy or rainy —high humidity or low, Dayco Cots minimized lapping 4 to 1 over other cots.

Even in "dog days", when control of humidity was next to impossible, Dayco Cots stayed dry, never becoming gummy or sticky. Principal reason is the exclusive Dayco construction. Made of finest synthetic rubber compounds, Daycos have no large rough fillers that cause excessive lap ups and ends down or ingredients that become soft and sticky on highly humid days. Daycos are saving a lot of downtime for mills everywhere.

Why don't you make a money-saving test? Write Dayton Rubber Company, Textile Div., 401 South Carolina National Bank Building, Greenville, S. C.

* *Name on request*

Dayton Rubber 51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Products for Better Spinning and Weaving

cently by Richard M. Moss, chairman of the board and president of Clinton, and Joel S. Mitchell, president of Standard Brands. The proposed sale is expected to be submitted for approval of Clinton's stockholders soon. No personnel or policy changes are expected to result from the sale. Clinton is a major supplier of corn starch for the textile industry.

Louis P. Batson Co. To Distribute Hand Dryers

The Louis P. Batson Co. of Greenville, S. C., has been appointed Southeastern distributor for National Dryer Sales Corp. of Chicago, Ill., and will offer National's hand dryers for plant wash rooms. The warm air dryers are used to replace paper towels.

Van Norman Industries Acquires Butterworth

H. W. Butterworth & Sons Co. of Bethayres, Pa., manufacturer of washing, dyeing, bleaching, mercerizing and embossing machinery, has been purchased by Van Norman Industries Inc., which plans to operate it as an autonomous and separate company. Acquisition was effected through an exchange of stock. All Butterworth operations will continue unchanged, it is said.

Whitin Moves To New Quarters In Atlanta

Whitin Machine Works has moved its Atlanta, Ga., offices from the Healey Bldg. on Forsyth St. to the company's new building at 728 Spring St. N. W. The new building offers increased facilities for the textile machinery sales and service offices and will also provide display space. Whitin Business Equipment Corp., a wholly-owned subsidiary recently organized by Whitin, will share the premises. New telephone numbers have been assigned to both divisions. The textile machinery numbers are Emerson 7114, 7115 and 7116. Telephone numbers for the business equipment division are Emerson 7111, 7112 and 7113.

Carolina Brush Co. Destroyed By Fire

The building of Carolina Brush Co., Charlotte, N. C., brush manufacturer for the textile industry, was destroyed by fire last month. James Smith, president, estimated the loss at between $50,000 and $100,000, and said the plant would be rebuilt at the same location.

Allied To Enlarge New York Offices

Enlarged sales and service offices for Caprolan deep-dye nylon have been leased by Allied Chemical & Dye Corp. at 261 Madison Ave., New York 16, N. Y., for occupancy in May. For the past year, Allied Chemical's offices have occupied the entire 21st floor of the building. However, with the advent of full commercial production

at the company's new fiber plant at Hopewell, Va., additional facilities will be required for sales and sales development, technical service, trade relations, advertising and sales promotion. The company has leased the entire fifth floor of the new office building, and will use part of the space to relocate New York sales offices of its Barrett, General Chemical and Solvay Process Divisions which are now at 40 Rector St.

Rohm & Haas Co. In New Atlanta Office

Rohm & Haas Co., Philadelphia, Pa., chemical manufacturer, has moved its Atlanta office to a new location at 1428 Peachtree St., N. W. Heading the textile division sales are A. K. Haynes and L. C. Harmon Jr.

Colson Named Distributor For Structo System Inc.

The Colson Corp., manufacturer of material handling equipment, has been named distributor of products made by Structo System Inc. Structo manufactures slotted steel framework angles which can be bolted together to form racks and shelving, ladders, scaffolding, work benches, ramps and loading docks. Main plants of both Colson and Structo are located in Elyria, Ohio.

Foxboro Expanding Training Center

The Foxboro Co. of Foxboro, Mass., has announced that it is doubling the size of its training and education center to meet the increased demand for trained instrument personnel. Scheduled for completion early in 1956, the new building will accommodate 46 trainees, nearly twice the number handled previously. Plans call for 2 20-student classrooms, 2 laboratories where bench instruction and service training can be given, an instrument demonstration room, a conference area and enlarged quarters for the expanding teaching staff. The expansion is being made to help reduce the customary waiting period for those who wish to enroll in the various courses of instruction. Nearly twice as many courses will be offered. Two recent additions to the training staff brings to 5 the number of full-time instructors at the center.

American Aniline To Handle Pittsburgh Coke Dye Sales

Koppers Co. Inc. has taken over marketing of textile dyes previously made and sold by Pittsburgh Coke & Chemical Co. and will market the dyes through its subsidiary, American Aniline Products Inc., Lock Haven, Pa. Under terms of the agreement, Koppers has acquired the textile dyestuff business of Pittsburgh Coke exclusive of its manufacturing facilities in that field. Pittsburgh Coke will continue to produce a number of vats not currently made by American Aniline, with the latter handling all sales. The Pittsburgh Coke sales staff has joined American Aniline under terms of the agreement.

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DEPENDABLE SOURCE OF SUPPLY

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textile bulletin

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Inquiry & Reader Service . . . . . EMILY KERNS

TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, $1.50; three years payable in advance, $3.00;

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The New Year—Problematical Happiness

Every publication that has crossed our desk in recent weeks has taken a whack at New Year predictions. The safest procedure for an editor, of course, is to query industry authorities and quote them as to what is ahead in the next 12 months. This relieves the editor of making unqualified statements himself and thus running the risk of having the limb on which he is perched sawed off between him and the tree.

Industry leaders and experts have to express enthusiasm anyhow. It's the very nature of business predicting. Can you imagine a trade association executive or prominent mill man saying "Everything looks terrible to me"? He undoubtedly would be accused of rank heresy, or at least of having a first-class hangover from the office party.

So, we won't go through the motions of quoting the authorities. Not that we claim to know much more about what's ahead than anyone else, but we are quite willing to bull ahead with the market pulse-readers and say that business volume ought to be very good in the textile industry this year.

Business leaders in all lines are optimistic. They are not just talking, either. The New Deal, which claimed to have invented financial pump-priming, is being outdone by private enterprise through the investment of huge sums in productive expansion. The round-robin of positive business action and reaction means, in essence, that when General Motors makes more cars G. M. workers have more to spend on wearing apparel, for instance; in turn, mills run busier schedules and mill workers buy more automobiles.

Speaking of automobiles and the like, the extension of debt to be repaid out of future income is usually associated with the purchase of goods which will provide services over an extended period of time. This is the case in durable goods and homes. With credit restrictions relatively loose in recent years, the buyer's emphasis has been on durable goods. If credit is tightened, as indicated by economists, the same buyer might be expected to turn back to the purchase of soft goods—and away we go with a new textile prosperity.

It all looks good on paper, but there are caution signs for all types of industry, and some particular ones for textiles.

This happens to be an election year. You are going to find both political parties leaning over backwards to avoid offending anyone. Republican leaders are beginning to look the other way and mumble something about balancing the national budget before tax reductions can be considered. Tax-wise, the Democrats are talking about something for the "little man."

The country as a whole has become so appreciative of integrity, decency and modesty in the White House that the Republican Party is as yet unwilling to face up to the idea that no man in his 60s with a heart condition should run for the Presidency. Instead of being forthright and admitting that another Republican candidate must be found, most G.O.P. leaders continue their wishful thinking on Ike, while meanwhile the Dow-Jones average goes up and down every market day—in effect depending on the activity of the President's constitution on any particular morning.

On the other side of the fence, you find Democratic Party leaders sniffing and yapping at each other when one of the kennel inhabitants proposes to pursue a program of "moderation." Just when did "moderation" get to be a terrible thing?

One could indulge in a degree of wishful thinking for the textile industry and say that the country has sopped up

about all the hard goods it can, and now it is time for the population to get a new wardrobe. But this won't happen until Mama stands at the store counter and decides that the new blouse has something in its make-up that she "must" have, even though her bureau at home contains a dozen shirtwaists in good condition. The automobile industry does it by convincing drivers that they really shouldn't subject themselves to wear and tear of rolling up windows and turning steering wheels on 1953 models when 1956 "extras" will do it for them; the appliance people sell you on the idea that you will miss a lot of life without the 24-inch T.V. set, so you buy it and put the old one in the kids' playroom.

Market promotion is, however, something that the textile industry is likely to get smart about, and it's a problem that cannot be solved by outside factors. But what about other problems, where solutions are not easily found or controlled, but which nevertheless must be faced?

Obviously at the head of the list is the import situation. In this respect the industry currently is floundering. It has asked the Secretary of Agriculture to come to its rescue. Don't hold your breath for him to act, for he leans on the State Department in foreign trade matters, and the striped-pants boys won't even listen to our industry. Don't expect any help, either, from the Commerce Department; it so far has merely "recognized" the seriousness of the situation. So, it will be up to Congress to do something. Even though sufficient votes have been lined up in both House and Senate, don't count on representatives from other than textile states standing fast. They are going to hedge, because someone has told them that the Japanese really don't want to disturb the American textile economy, and even have offered to set up their own export quotas. How gracious and considerate!

All the while, of course, the State Department is opposed to disposing of the American surplus stocks of raw cotton in the world markets as well as all efforts to restrict the rising tide of cotton goods imports from Japan. Because of the effect these restrictions are calculated to have on the Administration's foreign trade policy, the State Department seems to cling as tenaciously as ever to its apparent concept that the cotton economy of the United States, affecting the livelihood of some 15 million people, is expendable. It will take some 16-cylinder brainpower, in overdrive, to reconcile the cotton situation. One element wants to keep its government subsidy, continue to overproduce, hold one price in this country but let the government sell *its* stocks overseas at a lower price. Another element says to sell the surplus overseas, but not let it back in this country in the form of manufactured goods.

Another adjustment which has to be made hinges on the new minimum wage of $1 effective this Spring. From all indications it seems that the textile industry is determined to handle this one wisely, to the benefit of all concerned.

But the big item labor-wise will be pressure of union organizing drives. The textile industry has been able, generally, to maintain its independence of union bullying because most employees have found no reason to join up. But the very fact that the industry is largely unorganized puts it squarely up to the big boys of A.F.L.-C.I.O. They mean to organize every mill in the country, and don't count on intramural union fights relieving the pressure.

Be you a registered Southern Democrat who is a party man on the local and state level but who likes conservatives in office, or be you a Down Easterner with five generations of Republican background, you more than likely are in general accord with policies of the Eisenhower Administration. His type of administration believes that healthy business is good for everybody. So do you, because you have seen it work.

This year, apparently, is the year for business to tell its story with conviction. There may not be another chance if the "Fair" (or whatever new label they assume) Dealers get back in.

Get set; it will be an interesting year.

The French Return To Jamestown

The recent first annual observance of "Wool Week" in Charleston pointed up many aspects of the spectacular growth of the woolen industry in South Carolina from fleece to fashion. The story is one which has many remarkable angles. But one facet of the rise of the Southeast's first wool processing plants, both within a hundred miles of Charleston, provides an unusual historical coincidence.

Silk, rice, indigo, and Sea Island cotton—they've all had their day in the economy of the South Carolina low country of which Charleston is the metropolis, until removed by economic reversal, war, the advance of chemistry and insects.

Silk, never so important as the rest, was the first to go, to be supplanted by indigo, in turn removed from the scene by the invention of the cotton gin and the introduction of chemical dyes on the European markets.

The French were responsible in the main for the short-lived silk culture. While the Huguenots, or French Protestants, found refuge also in some other New World colonies during the last quarter of the 17th Century and the first half of the 18th, they settled largely in and around Charleston. In the province of Carolina they early set up a factory where they mixed wool with silk in the manufacture of shawls and rugs and these attracted considerable attention in Europe.

Evidently, however, this enterprise was subsequently suppressed, for it wasn't until late in the 18th Century that Great Britain reversed its trade policy to permit a mill for spinning silk—not weaving—in the colony; and by then, incidentally, silk culture already seemed foredoomed to economic failure.

Largest Huguenot settlement in the province outside of Charles Town itself was along the Santee River, some 60 miles to the north. The only town of the area known as French Santee was Jamestown, laid out about 1705. The town never flourished, though. There were Spring floods and the climate left much to be desired. The Huguenot settlers migrated farther upstream. By 1720, Jamestown was largely deserted, desolate and lonely.

Now, in a sense, the French have returned—after more than 250 years—to the wilderness on the south bank of the Santee that was once Jamestown. Beside the ruins of old Jamestown there now hugs the earth a vast, one-story wool combing and scouring plant, about as modern as there is to be found anywhere in the world. It is the newest unit in the far-flung industrial empire of Amedee Prouvost & Co. of Roubaix, France.

The opening of the plant has brought to Jamestown about

a dozen managerial and supervisory personnel and their families, nearly all of whom are French and who are learning English for the first time. It is not the French firm's first plant in the United States; it established the Branch River Combing Co. at Woonsocket, R. I., in 1924. Amedee Prouvost & Co. also has plants in France, South America, and in South Africa.

The Santee plant has an initial area of 150,000 square feet for the first unit, processing 20 million pounds of wool annually, and an ultimate expansion to four units is planned. It follows, within a year, the building of Wellman Combing Co., the Southeast's first wool processing plant at Johnsonville, by Nichols & Co. of Boston. Here too an expansion to four units is planned.

Nichols & Co. and Amedee Prouvost & Co. are the woolen industry's largest processors of raw wool. The raw wool for the Johnsonville and Santee plants comes through the port of Charleston from all corners of the world. Their production moves into woolen and worsted mills now dotting the Southeastern landscape in ever-increasing number. At Sumter there is now located a wool top dyeing plant, Model Dye Southern Inc. Sumter, Johnsonville, Jamestown—they are all within a hundred miles of each other.

South Carolina had a few woolen and worsted plants, as did some of the other Southeastern states, prior to World War II, but since then 14 woolen and worsted mills costing more than $33 million have been built in the Palmetto state. Charleston became a wool port of entry in April 1954, and within the next 12 months 45,000 bales of wool passed over its docks. And it is reported that the wool requirements of other manufacturers presently negotiating for plant sites in South Carolina alone will more than double the wool imports through Charleston in 1956.

It takes a lot of wool for the new Johnsonville and Jamestown processing plants. Their initial units have a combined capacity of 1,000,000 pounds of raw wool each week. Wool is a new cargo through the port that promises to rival cotton and textiles as volume grows. Since the advent of the boll weevil, the sea islands of the low country no longer produce the fabulous Sea Island cotton, and extra long staple cotton is imported, under quota, mainly from Egypt. Most of it comes through Charleston, now the nation's 14th port in value of foreign trade.

TEXTILE INDUSTRY SCHEDULE

— 1956 —

Jan. 23-26 (M-Th)—**PLANT MAINTENANCE & ENGINEERING SHOW and CONFERENCE**, Convention Hall, Philadelphia, Pa.

Jan. 30-31 (M-Tu)—Annual meeting, **NATIONAL COTTON COUNCIL OF AMERICA**, Buena Vista Hotel, Biloxi, Miss.

*Feb. 2 (Th)—Annual meeting, **ASSN. OF COTTON TEXTILE MERCHANTS OF NEW YORK**, Plaza Hotel, New York City.

*Feb. 4 (Sa)—**PIEDMONT SEC., A.A.T.C.C.**, Poinsett Hotel, Greenville, S. C.

Feb. 6-8 (M-W)—Marketing conference, **A.M.A.**, Hotel Statler, New York City.

Feb. 13-15 (M-W)—**TEXTILE DIV., AMERICAN SOCIETY FOR QUALITY CONTROL**, Institute of Textile Technology, Charlottesville, Va.

Feb. 15-17 (W-F)—**COTTON RESEARCH CLINIC** (sponsored by National Cotton Council of America), The Carolina, Pinehurst, N. C.

Feb. 15-17 (W-F)—Personnel conference, **A.M.A.**, The Palmer House, Chicago, Ill.

*Mar. 7-8 (W-Th)—**COTTON SPINNER-BREEDER CONFERENCE** (sponsored by Delta Council, with Combed Yarn Spinners Assn. and A.C.M.I. as hosts), Charlotte Hotel, Charlotte, N. C.

*Mar. 13-16 (Tu-F)—**COMMITTEE D-13 ON TEXTILES, A.S.T.M.**, Warwick Hotel, New York City.

Mar. 22-23 (Th-F)—Annual meeting, **TEXTILE RESEARCH INSTITUTE**, Commodore Hotel, New York City.

Mar. 22-23 (Th-F)—**SOUTHERN TEXTILE METHODS AND STANDARDS ASSN.**, Clemson House, Clemson, S. C.

*Apr. 5-6 (Th-F)—Spring meeting, **CAROLINAS SEC., AMERICAN SOCIETY FOR QUALITY CONTROL**, Clemson House, Clemson, S. C.

Apr. 5-7 (Th-Sa)—Annual meeting, **A.C.M.I.**, Hollywood Beach Hotel, Hollywood, Fla.

*Apr. 7 (Sa)—**PIEDMONT SEC., A.A.T.C.C.**, Sir Walter Hotel, Raleigh, N. C.

Apr. 9-12 (M-Th)—**NATIONAL PACKAGING EXPOSITION** (in conjunction with packaging conference of American Management Assn.), Atlantic City (N. J.) Auditorium.

Apr. 11-13 (W-F)—Annual convention, **ALABAMA COTTON MFRS. ASSN.**, Buena Vista Hotel, Biloxi, Miss.

Apr. 19-21 (Th-Sa)—Annual convention, **PHI PSI FRATERNITY**, Alabama Polytechnic Institute, Auburn.

Apr. 25-28 (W-Sa)—Annual convention, **COTTON MFRS. ASSN. OF GEORGIA**, Emerald Beach Hotel, Nassau, Bahama Islands, British West Indies.

*Apr. 27 (F)—**SOUTH CAROLINA DIV., S.T.A.** (Pelzer Mills as host), Pelzer, S. C.

Apr. 27-28 (F-Sa)—Annual convention, **DELTA KAPPA PHI FRATERNITY**, Atlanta, Ga.

May 2-3 (W-Th)—Spring meeting, **THE FIBER SOCIETY**, Clemson House, Clemson, S. C.

May 2-4 (W-F)—Industrial safety conference, **NORTH CAROLINA INDUSTRIAL COMMISSION**, Charlotte (N. C.) Hotel.

‡May 5 (Sa)—**PIEDMONT DIV., S.T.A.**, Catawba Country Club, Hickory, N. C.

May 9-11 (W-F)—Insurance conference, **A.M.A.**, Hotel Roosevelt, New York City.

‡May 12 (Sa)—**NORTHERN NORTH CAROLINA-VIRGINIA DIV., S.T.A.**

May 23-25 (W-F)—General management conference, **AMERICAN MANAGEMENT ASSN.**, Hotel Roosevelt, New York City.

*May 31-June 2 (Th-Sa)—**SOUTH CAROLINA TEXTILE MFRS. ASSN.**, The Cloister, Sea Island, Ga.

June 5-8 (Tu-F)—**MATERIALS HANDLING INSTITUTE EXPOSITION**, Cleveland (Ohio) Public Auditorium.

*June 8-9 (F-Sa)—Annual outing, **PIEDMONT SEC., A.A.T.C.C.**, Mayview Manor, Blowing Rock, N. C.

*June 17-22 (Su-F)—Annual meeting (in conjunction with apparatus exhibit), A.S.T.M., Chalfonte-Haddon Hall, Atlantic City, N. J.

June 21-23 (Th-Sa)—Annual convention, **SOUTHERN TEXTILE ASSN.**, Mayview Manor and Green Park Hotel, Blowing Rock, N. C.

Sept. 6-7 (Th-F)—Fall meeting, **THE FIBER SOCIETY**, Warwick Hotel, New York City.

Sept. 10-15 (M-Sa)—**PERKIN CENTENNIAL** (sponsored by various professional societies and trade associations), Waldorf-Astoria Hotel, New York City.

Sept. 13-15 (Th-Sa)—National convention, **A.A.T.C.C.**, Waldorf-Astoria Hotel, New York City.

Sept. 27-28 (Th-F)—Annual meeting, **COMBED YARN SPINNERS ASSN.**, Cavalier Hotel, Virginia Beach, Va.

Oct. 1-5 (M-F)—19th **SOUTHERN TEXTILE EXPOSITION**, Textile Hall, Greenville, S. C.

*Oct. 6 (Sa)—Annual meeting, **PIEDMONT SEC., A.A.T.C.C.**, Charlotte (N. C.) Hotel.

Oct. 10-12 (W-F)—Annual meeting, **NORTH CAROLINA TEXTILE MFRS. ASSN.**, The Carolina, Pinehurst, N. C.

*Oct. 16-19 (Tu-F)—**COMMITTEE D-13 ON TEXTILES, AMERICAN SOCIETY FOR TESTING MATERIALS**, Warwick Hotel, New York City.

Nov. 27-30 (Tu-F)—**NATIONAL CHEMICAL EXPOSITION** (under auspices of American Chemical Society), Cleveland (Ohio) Public Auditorium.

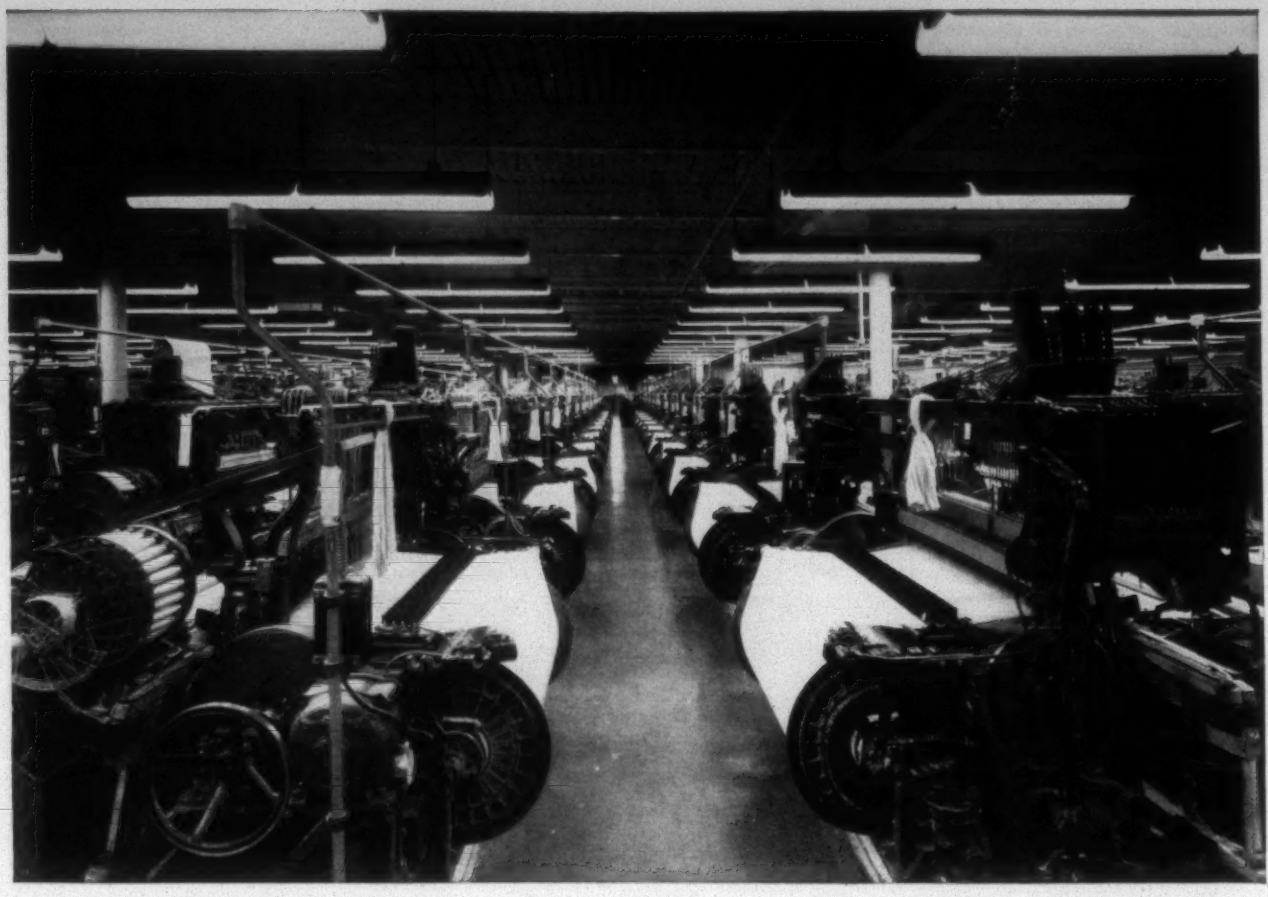
— 1957 —

Apr. 4-6 (Th-Sa)—Annual convention, **AMERICAN COTTON MFRS. INSTITUTE**, Palm Beach Biltmore Hotel, Palm Beach, Fla.

‡Fall—National convention, **AMERICAN ASSN. OF TEXTILE CHEMISTS & COLORISTS**, Boston, Mass.

***Listed for the first time this month.** ‡**Tentative listing.** †**Changed or corrected from previous issue.**

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday; (Su) Sunday



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1. *Texaco Stazon* does not creep, drip or splatter – even under the severest loom operation. Naturally, it lasts longer.

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3. *Texaco Stazon* minimizes wear, assuring longer bearing life.

4. *Texaco Stazon* assures normal operating temperatures.

5. *Texaco Stazon* maintains low machine power consumption.

In spinning, *Texaco Stazon* is ideal for top roll lubrication. It stays off the cots, assuring cleaner yarn.

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FOR THE TEXTILE INDUSTRY

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textile bulletin

VOL. 82 JANUARY 1956 NO. 1

Research Achievements Of The Past Year

By J. B. GOLDBERG, Chemical Engineer

Mr. Goldberg is the personification of the industry's "research in retrospect," making an appearance every January before the American Association for Textile Technology in New York City. His paper is abstracted herewith.

WITH apologies to the Chrysler Corp.'s reference to the "Forward Look," this "backward look" at last year's textile research achievements is a reminder of our industry's continuing progress on every front. If new and improved machines, processes, fibers and fabrics have not yet reached perfection, we may take comfort in Dickens' remarks in "Great Expectations" when he said that "probably every new and eagerly expected garment ever put on since clothes came in fell a trifle short of the wearer's expectations."

Fibers and Yarns

Natural Fibers—Proponents of nature's fibers may contend that there is little room for improvement, but a review of the literature indicates that the scientists still have hopes of effecting modifications to enhance the properties of cotton and wool in particular. Last March Dr. J. B. Speakman, eminent English wool authority, stated that methods were evolved at Leeds University ten years ago to give pleats in worsted fabrics which were just as permanent as those in mixtures of wool with some of the newer synthetics. He also reported that other knowledge waiting to be applied included dyeing wool in the cold, improving its luster, increasing wear-resistance and reducing affinity for water. An imposing series of papers was presented at the International Wool Textile Research Conference held in Australia last year covering research studies on wool and wool processing. Wool might become its own worst enemy if the ultimate success is achieved in the production of protein fibers from wool waste and hair as described at this conference.

Supima, a new Western variety of cotton, grown after years of research, and said to be highly lustrous, stronger and more resilient than any other cotton, was introduced commercially by a newly-formed promotional organization. Describing such a fiber as the "champagne" of cottons appeared to be an attempt to glorify the product of a gin mill. Reports of progress in the chemical modification of cotton by cyanoethylation were presented at several research conferences.

Mindful of the criticism of the "downtrodden" look in cotton tufted carpeting which became popular a few years ago, a project was initiated just recently at the Southern Research Institute to try to improve its resilience for this end-use. And the results of a research project by the Hoover Co. to find means for better "on location" cleaning of such carpeting are due to be disclosed later this month. The U. S. Agricultural Research Service reported that almost all of a four million pound production of ramie fiber in 1954 went to a single company, but a British concern abandoned its ramie fiber project in British Honduras because it was not economically sound. A new technique suitable for decortication of ramie relied on the use of ultrasonics, according to a Massachusetts research laboratory. Popularly used as a carpet backing for many years, jute yarns achieved new dignity by being introduced in a range of 16 colors for surface yarns in the manufacture of luxurious, inexpensive rugs and carpeting, as well as for hand weaving. Acrylic and polyester fibers are now being used as pillow stuffing but inexpensive feathers may soon be back in the pillow fight. Early in the year Alexander Smith Inc. announced its Keracurl process for the low-cost treatment of chicken feathers to impart filling power, warmth and resiliency comparable to those of duck and goose feathers. Reminiscent of the redwood tree bark fibers offered as a stuffing and for fiber blending a number of years ago is still another suggested filler for pillows, bedding and upholstery, a treated bark from the Australian Titree. According to the report, this material was apparently in use in a number of Australian hospitals. Erupting from Italy came word of textile fibers made experimentally from volcanic lava, yielding fabrics which were resistant to acids, alkalis and temperatures up to 1100°C.

Man-Made Fibers—On the man-made fibers front, American producers, as well as mills, converters and consumers, seemed to be enjoying a slight rest period from the barrage of new synthetics which hit the market a few years ago. Announcements were confined to new names or progress reports on synthetics disclosed in previous years. The B. F. Goodrich Co. adopted Darlan as the name for its new dinitrile fiber, born Zetek, but still in pilot plant production only. The American Cyanamid Co. reverted to Creslan as a more stable designation for its experimental acrylic fiber and yarn. Allied Chemical and Dye Corp. christened its caprolactam nylon Caprolan, and the Celanese Corp. went into commercial production of its high-tenacity filament rayon Fiber X-6 as Fortisan-36. At the turn of the year it was reported that the California Research Corp., a subsidiary of the Standard Oil Co. of

California, planned to produce iso-phthalic acid as a raw material, with some interest in research to produce a new textile fiber, but no additional information on the subject has been published. Du Pont developed a new Type 680 dull nylon with improved resistance to sunlight degradation and very recently announced plans for the commercial output of Orlon 39 staple, predominantly coarse-denier filaments of varying lengths, particularly suited for the woolen spinning system. There were also rumors of a dyeable filament Orlon just around the corner. American Bemberg introduced a heavy-denier monofilament lustrous yarn as Glitter. A process for the production of very fine filaments (less than one micron in diameter) of fiber-forming polymers, such as Vinyon, was reported by the American Viscose Corp., with greatest success claimed in producing filters for gases.

Competitive with American Enka's Jetspun solution-dyed filament rayon and Courtauld's Coloray staple, American Viscose recently announced the availability of its Colorspun dyed filament and staple rayons in a limited color range. Nymo Uvr was publicized as a new Belding Corticelli sewing thread with resistance to ultra-violet degradation estimated to be five to ten times superior to ordinary nylon thread. A novel reflective yarn, for introduction in knitted or woven fabrics to be used in garments and thus act as a safeguard for pedestrians on streets and highways at night, is Flecton, developed by the Minnesota Mining and Mfg. Co. Two types of this yarn reached the market in small quantities by the end of the year, one using a rayon yarn base, the other, nylon, with the reflective material presumably comprised of tiny glass beads.

Labor cost saving in quilling as well as warping was possible through introduction by Celanese of acetate yarn on six-pound cones and American Enka announced that it was the sole producer of three-pound knotless cakes priced lower than cones and insuring greater efficiency.

Aimed at eliminating shading and colorfastness problems and permitting the development of novel blended color effects, the Hartford Rayon Corp. was first on the domestic front with solution-dyed rayon carpet staple.

According to trade reports, manufacturers of rayon tire cord are preparing for introduction of even stronger high-tenacity yarns that may reduce the relative superiority of nylon.

At the Congress of Industrial Chemistry meeting in Madrid a Belgian company announced a new class of polyacryionitrile polymers which offered interesting possibilities for new synthetic fibers which might be dyed easily and inexpensively. It was also suggested that the dyeability of Orlon fibers treated with hydroxalamine in aqueous medium is greatly enhanced and fabrics are wash-fast and more water absorbent with little loss in physical properties.

Not to be outdone by the ingenious Japanese who developed a synthetic fiber from rice, bran, whale oil and urea, and probably uncovered by a reporter with a nose for news, the Russian Institute for Artificial Fibre Research reported producing a viscose fiber with up to 20 per cent of proteins from whalemeat or fish refuse. British Celanese Ltd. announced plans to make Cellon, a nylon-6 polymer type staple, and offered three new acetate yarns, a "marl" yarn composed of a mixture of colored and undyed filaments, a "whiter white" yarn and Souflette, a voluminous yarn. Courtauld's Ltd. exhibited its new KN acetate yarns said to give an attractive silk-like handle and to impart crush-resistance. Also from England reports from another manufacturer of a new type of viscose yarn, with no details disclosed, while from Germany there were announced Prelana, and Dolan acrylic fibers, the latter available in a wide range of colors. Belgian Fabelta was said to be in pilot plant production of Z-54 high-tenacity rayon with a low degree of swelling and improved resistance to washing, abrasion and tearing.

The patent literature revealed a method of making rayon highly absorbent by dispersing silica gel in the viscose solution, and just to be contrary, another patent described means of reducing absorbency by the introduction of a polyacrylamide or formaldehyde derivative.

A novel type of yarn claimed to provide a high degree of thermal insulation at low cost originated in Germany. Thin strips of a foam material (Moltoprene) are wrapped with cotton or rayon yarns and the woven fabrics, trademarked Ceolon, were being used for coats, jackets and bathrobes. A high-strength multiple core yarn trade-marked Delwin was developed by two scientists of the Canadian Department of National Defence and numerous applications were anticipated in industrial fabrics, for work clothing and apparel in general where greatly improved tear resistance might contribute to longer life.

Manufacturing Methods and Equipment

Fiber and Yarn Processing—Experiments in the use of high draft, high production top-breaking devices on rayon tow were conducted by a Rhode Island company last January with drafting zones providing a maximum draft of 216. Saco-Lowell announced a new model comber operating at 125 nips per minute which gives increased piecing and yields sliver with not over 12 per cent variation. Still in the process of development was the new high-production draw frame to be built in heads of four deliveries only, each driven by its own motor. A new top arm loaded and adjustable spring pressure system and the elimination of all weight hooks are among the design features. Output is expected to be double that of conventional frames. Very recently there were unconfirmed rumors of a new Saco-Lowell direct spinning frame known as the Spinster said to eliminate the roving process in the long draft system of spinning.

Described as entirely new in construction and operation was the Whitin Even-Draft drawing frame, covering a range of staples up to three inches in length. Drafting is by a four-over-five roll drawing unit and delivery rate about 40 pounds per hour for a normal weight of sliver. Pneumafil cleaners and large cans contribute to lower labor costs. The Whitin Spoolmatic redraw doubler provides highly-economical means for uptwisting multiple-ply yarns with the doubling of several ends on a single spool eliminating need for expensive equipment on the twister to detect broken ends. Another Whitin product designed for creating novelty yarns with splash effects of alternating colors, the Duplex Splash attachment for twisters permits rotation speed changes on both upper and lower lines of delivery rolls independently.

The increasing demand for elastic-type or stretch nylons encouraged the design of new equipment on the part of several machine manufacturers. Universal Winding Co. offered its new Number 550 Leesona stretch yarn machine and announced acquisition of the Permatwist patent applications covering process and apparatus for many such yarns. Last May they signed an agreement with the Heberlein

Patent Corp. to protect against any possible infringement. A false twisting and setting technique was disclosed by British Nylon Spinners Ltd. early last Summer. Later the same yarn producer exchanged licensing agreements with the Deering Milliken Research Corp. for the manufacture of a no-torque stretch yarn, adopting the name of Agilon originally used by the American concern. Also for the production of crimped stretch yarns, the English concern of Scragg and Sons Ltd. patented several components of a new processing machine said to work on the false twisting principle, operating at speeds of 20,000 to 50,000 r.p.m.

A novel tire cord twister which takes yarn from the manufacturer's package and yields finished tire cord on a single spindle at speeds of from 8,000 to 10,000 r.p.m. was shown by the Deering Milliken Research Corp. at the Second International Textile Exhibition in Brussels last Summer. The Coats and Clark plant in Georgia was reported to be the first American plant to import a Swiss twister frame which is only eight inches in working width and 25 inches wide at the headstock, gear-driven spindles eliminating some of the difficulties encountered with spinning tapes. For those machines still utilizing tapes, Burlington Industries developed a new bondable nylon tape with a life of three to four times that of traditional tapes, at the same time overcoming distortion normally encountered in spliced or sewed tapes.

1956 MAID OF COTTON is Patricia Anne Cowden of Raleigh, N. C., who was selected winner of the National Cotton Council contest Dec. 28 at Memphis, Tenn. King Cotton's new fashion and good will ambassador is 21 years old, five feet 7½ inches tall, and has brown hair. She is a graduate of St. Mary's Junior College in Raleigh, where she majored in secretarial administration and voice. Now on leave of absence from her job as a secretary at the Security National Bank, she begins her world-wide one-year tour of duty Feb. 1.

Foreign machinery improvements included a new Japanese super high-draft spinning frame eliminating roving and reputedly suitable for turning out a wide range of fine yarns from combed drawing sliver with quality equal or better to yarns spun on conventional equipment but at a lower cost. Some of the accomplishments appeared to be not unlike those attributed to a German sliver-to-yarn cotton spinning frame described a few years ago. Another Japanese product was the Toyoda "wave draft" device for high-draft spinning undergoing mill tests and described as consisting of a pair of interlocking, gear-like steel rolls between two condenser rolls replacing the apron, eliminating cleaning or changing of roll covers. The English concern of Platt Brothers offered a new top apron drafting system and spring tray weighting for roving frames to provide greater versatility in handling a wide range of cotton staples. Exhibited at the Brussels Exhibition was a new English flyer and flyer presser utilizing a new principle to give tension control without stretching the roves. Claims were made for the providing of denser bobbins with improved quality and higher productivity. Of interest in the manufacture of non-woven fabrics was the report of a German machine for the automatic production of cross-layed fiber webs of identical strength in longitudinal and transverse directions. The new Swiss Automixer was disclosed as a blending machine capable of feeding three pickers with up to 1,300 pounds of fiber per hour with superior controlled accumulation and blending. A French publication carried a description of a new device to control tensions between front roller and flyer on roving frames by passing it over a light slot activating photo-electric cell mechanism which in turn alters winding rate onto the roving bobbin.

Warping, Slashing, Weaving—The McBride three-way signal light for attachment to magazine warper creels allows immediate detection of broken ends. Moretex 70 was described as a new top dressing for sized warps to replace fats and softeners in sizing, claiming advantages of reduced shedding, fewer yarn breaks, more effective control of moisture content and easier desizing.

A new concept of air flow designed to eliminate rolled yarn, hard size and over-drying was embodied in the new Saco-Lowell hot air slasher and a New Jersey dyer claimed innovations in slasher dyeing technique to give improved weaving efficiency. Non-stop slashing was credited to a slasher doffer which automatically severs full warps and starts winding on a new loom beam without stopping. The Draper Tru-Mold shuttle featured dimensional stability under atmospheric condition changes, better shuttle flight control and considerably longer shuttle life. A new type Wilton carpet loom by Crompton and Knowles is provided with controls for starting, stopping, adjusting of pile, warp tension and reversing, and sculptured effects are possible with cut or uncut loops.

The Lansdowne Steel & Iron Co. offered a new carpet loom said to have productive capacity comparable with that of tufting machines. The Southern Loom Development Co. filed patent applications for a new variable speed positive let-off designed to eliminate wavy cloth. Claiming simpler construction than American-made devices, an English manufacturer patented a new bobbin truck incorporating a spring base to present operators with layer after layer of bobbins as top ones are removed. Although American manufacturers continue to report shuttleless loom projects still in the

experimental stage, foreign competitors have been marketing a limited number of various models for mill evaluation. About 20 Italian Ripamonti looms are said to have been built to date operating at up to 700 picks per minute with a filling supply adequate for 48 hours working without replenishment. Some further details of the Czech Svat loom with pneumatic picking motion were revealed which indicated speeds of 500 picks per minute in narrow fabrics. A unique Spanish weaving machine said to produce 24 rolls of cloth simultaneously in several colors of filling was described last March. Six warp beams are arranged alongside of each other on each side of the machine with filling inserted by a series of yarn carriers fed from cones at each end of the machine.

Of English origin was the Isotron static eliminator, very much resembling the radioactive type introduced by an American company a number of years ago. Also from England came a description of a continuous filling supply attachment for inserting double picks, promising to increase loom output and save the cost of pirn winding, the filling being fed from cones at each side of the loom. Conversion cost was estimated to be under $200.

Finished Goods

Dyeing and Finishing—No attempt is being made to record the hundreds of new and improved dyestuffs and auxiliary chemicals used in the wet processing and finishing of fabrics which were introduced to the trade during the past year.

Better methods for the stabilization of rayon fabrics continued to retain the interest of research workers as well as dyers and finishers. Early in the year the Old Fort Finishing Division of United Merchants and Manufacturers announced its Fort-Set finish for spun rayon shirtings, guaranteed to withstand repeated launderings at 160°F. with no significant shrinkage. Since then other dyers have offered stabilized finishes with similar claims. A patent issued to Du Pont described a method for imparting dimensional stability to fabrics by an ultrasonic vibration treatment in an aqueous bath, but no practical application has yet come to our attention. Newly-developed resins to be used in combination with Avcoset stabilizing finish promised to impart durable crease-resistance and any desired hand to rayon fabrics without sacrificing dimensional stability and with a minimum of tensile strength loss due to chlorine retention.

Last November Cluett, Peabody & Co. received a patent on a new gearless type of compressive shrinkage machine incorporating a thick rubber belt and credited with providing a smooth finish on both surfaces of the preshrunk fabric.

Considerable progress was reported in methods for achieving single-bath dyeing of acrylic fibers in blends with wool, as well as blends of Dacron polyester fiber with rayon and wool, utilizing such techniques as cationic dyes, cationic active dyeing assistants and combinations of cationic and non-ionic materials. Improved dyeing on acetate was obtained by means of the new Eastofix colors announced last April, with fastness to 160°F. washing for 45 minutes and light-fastness of not less than 60 and up to 80 and 120 hours.

Subject of an interesting research study reported on by Celanese scientists was that of ozone or "O" fading of acetate fabrics dyed with "gas-fast" blue disperse dyestuffs. Working closely with dyestuff manufacturers, dyers and finishers, other Celanese research workers reported progress in the dyeing and finishing of Arnel fabrics, both in 100 per cent form and in blends.

According to the inventor, a recent patent on a continuous piece dyeing method incorporating continuous agitation of the solutions may effect up to 35 per cent saving in labor costs.

Pressure dyeing machines for handling tufted carpeting up to 15 feet in width were introduced in Georgia plants to effect more uniform dyeing. New flame-proofing treatments for cotton cloth were among research development reports emanating from the U.S.D.A. Southern Regional Research Laboratory and the University of Chattanooga.

The application of ultrasonics to the textile industry is still creating only a faint ripple of interest, but a few items recorded during the past 12 months may be the forerunner of more shaking developments in the months ahead. The General Ultrasonic Co. claimed that their Sonidye process permits dyeing of Orlon in two to three minutes, according to an announcement made last May, and low-cost high frequency rotating generators suitable for scouring or dyeing operations were introduced by a Long Island company a few months later. Earlier in the year Hungarian technicians claimed to have developed ultrasonic equipment for drying fabrics by shaking out the water in a fraction of the time normally needed. Experiments conducted in piece goods washing processes indicated that a similar method might be more economical than traditional practice. It may be recalled that the washing of garments by sound waves was investigated some time ago and a small vibrator for home use was said to be on the market in England. Recommended use in small washing tubs along with soap or detergent solution, this device was supposed to insure freedom from wear and tear on delicate garments.

A new peroxide bleach process which eliminates silica scale was the subject of a patent application by Becco Chemical, and Proctor & Schwartz introduced a new continuous bleaching range with a capacity of 30 thousand pounds in a 24-hour day operating at up to 150 yards per minute. A silicone emulsion was claimed to be successful for imparting a combination of water and moth-resistant finish to wool, unaffected by a limited amount of repeated laundering and dry-cleaning.

Interest was revived in woolen and worsted goods mothproofing, with added features of improved wrinkle-resistance, dimensional stability and stain-resistance incorporated as part of an all-inclusive finish. Antiseptic finishes, too, appeared to take on new importance with the promotion of Perm-ASeptic and Sub-Du in addition to the long-established Sanitized process for imparting enduring resistance to germs, bacteria, perspiration odors, fungus and mildew.

Scientists still seem to be engaged in trying to imitate the characteristics of one fabric by modification of another. This was borne out by a British patent which described a process for "linenizing" cotton. Another British concern exhibited "cottonized" finish at a recent national fabrics fair, designed to give spun rayon the appearance of cotton. Instead of following such roundabout methods for transforming the appearance of rayon to cotton and then effecting a change from cotton to linen, our American spinners, weavers and finishers long ago took the more direct approach of making linen-like fabrics directly from spun rayon.

Stimulated by the increasing popularity of wash, drip-

dry and wear-without-ironing garments made of fabrics of the newer hydrophobic synthetics, there was a tremendous promotion of "no-iron" cotton fabrics started early in the year. Most of these depended on the use of selected resin finishes of the crease-resistant type. Careless claims for care-free cottons were soon modified to include suggestions for "some" ironing if the wearer wanted to look more like a snob than a slob. There followed the introduction of a limited number of rayon fabrics also processed to require a minimum of ironing after laundering and drip-drying. Joseph Bancroft & Sons Co. acquired rights to an English patented means for imparting durable ruffled or puckered effects on fabrics, plastics or leather.

The Apponaug Dynascope, a French process for multi-color photographic printing was said to provide up to nine shadings of each color, most patterns using only three or four rollers. Wamsutta Mills introduced fabrics with three dimensional effects by an Italian "dry printing" method. A novel overprinting technique for fabrics, felts and leather disclosed last Fall involved the application of metallized particles punched out of sheets of acetate butyrate film treated with a metal alloy. A combination one-step screen printing and embroidering process was reported in use by a New Jersey company, and the United Piece Dye Works introduced Perfo-Prints in which roller printing was combined with burn-outs, applicable to a limited number of cotton constructions.

Among printing innovations originated abroad was the Portuguese Aljaba machine employing large, light-weight cylindrical screens instead of engraved copper rolls. It was reported that the Morrison Machine Co. was building this equipment in the United States.

The German Textima printing machine was constructed with rollers arranged one above the other all in one plane, each with a pair of short axles, eliminating mounting on mandrels. Production speeds of up to 100 meters per minute were claimed, along with features of easy changing of the rollers, free view of the goods during printing and saving of power. An Italian automatic screen printer, capable of printing up to ten colors at 360 yards per hour, utilizes a continuous belt to which the fabric is gummed and then passed over a printing table equipped with stencils which are raised and lowered automatically. Limited to single-color printing, with an output of 30 to 40 yards per minute, a Scottish screen printer depended on use of an endless gauze band through which color is doctored onto the cloth.

Another German machine was described as suitable for one to eight-color printing, one-color flock printing, or multi-color screen printing with successive one-color flock applications, while the Swiss Tex-o-Stat combined flock and screen printing machine and was heralded as being the only one capable of producing an effect of continuity in design eliminating evidence of a joint between screens.

New Developments in Fabrics—Atomic age terminology seems to have penetrated to the textile field. The growing use of cashmere in fabrics finally led the Federal Trade Commission to warn against "cashmere fallout" in blends represented as containing more of this precious fiber than could be detected in the finished goods. Fur-like acrylic fiber pile fabrics, although not new in 1955, became exceedingly popular among women's coat manufacturers. A few weeks ago a new version, identified as Mutation and described as "mock mink," duplicated the luxury fur in a variety of colorings and stripe effects.

CARPET WITH BUILT-IN FOAM CUSHION is shown here by Frank Butler, sales manager of Collins & Aikman's carpet division. Called "Candalon," the 100 per cent nylon fabric is woven on jacquard looms in intricate weaves that eliminate crushing. It is being manufactured in the Collins & Aikman plant at Roxboro, N. C., which also produces foam-backed automotive carpeting.

Early last month the United States Rubber Co. announced the development of Trilok, a flat-woven fabric which becomes permanently three-dimensional when immersed in boiling water. Use of polyethylene yarns in the warp only and conventional yarns in the filling permits high shrinkage of the former with a resultant "puff" effect. Initially introduced to the automotive trade, other applications are anticipated in furniture covering, draperies, bed-spreads and carpeting.

Tests made in an automobile assembly plant indicated that work gloves of heavy-duty canton flannel containing a blend of cotton and nylon gave more than twice the wear of conventional cotton gloves. In spite of the growing use of blends in apparel fabrics, however, some people are still guided by the Bible rather than the fabric technician. Heeding the admonition that we should not wear garments of blended fibers, a London retail merchant established a shop for the sale of what he designated as "kosher" clothing composed of nothing but pure fabrics.

Rayon "straw" has been known for many years, but a newer approach was the design of an all-Dynel straw-like fabric for men's hats to be on sale this Summer and not likely to wilt in the rain. Of more interest at this time of the year is the introduction of a new look in wool blankets. While single pieces of goods with more than one shade have been known to emerge from some of the best dye houses, the deliberate production of two shades on opposite faces of a wool blanket in a single dyebath was achieved by the Kenwood Mills. Means for obtaining carved effects in pile constructions by heating fabrics composed of a composite yarn of natural and vinyl thermoplastic fibers

was revealed in a patent issued to the Firth Carpet Co. last January. During the same month the U. S. Rubber Company received a patent on a method of making a "breathable" water vapor permeable but waterproof coated fabric by incorporating softeners, water-repellent materials and a purified wood cellulose flock in a neoprene.

Among developments not likely to consume any great poundage of fibers were extremely strong and tough papers made with nylon or other synthetic fibers, a flat woven calendered Dacron taffeta for use in the fabrication of human blood vessels and a knitted Orlon tubing to substitute for the principle human artery.

Fiber glass made an appearance as a scrim cloth base for high wet strength paper to be used in one-trip mail sacks and as woven "glascloth" combined with flexible vinyl to make a moisture-proof wall covering. New outlets for rayon not related to fabrics were rayon staple sterile absorbent with the suggestion "use like cotton" and a polished rayon twine called Amercoty, 12 per cent cheaper and 15 per cent stronger than similar polished cotton twine.

An interesting method for obtaining fancy effects in fabrics during weaving was dependent on the wrapping of ordinary rubber hose around the whiproll, resulting in variable warp tension and deliberate fabric distortion due to pickage variations. For improving the wearing qualities of rayon fabrics, a New Jersey company applied a latex coating with suggested uses in household upholstery and automobile seat covers. The "do it yourself" fad spread to the textile industry in the form of fabrics with printed patterns outlined for the filling in of colored inks by the amateur cloth decorator.

It was predicted that nylon tarpaulin fabrics would replace even greater quantities of conventional cottons and at least two manufacturers were making a laminated type of finished product by applying sheets of polyvinyl chloride to either side of woven nylon, although other manufacturers were partial to rubber coatings. Cotton gained a new market, however, in ten-ounce duck coats worn by sheep to protect the fleece from dust. This switch on the wolf in sheep's clothing was said to be protection against coyotes which did not recognize the strange looking animal.

Automobile tires were reported to have been made with silicone rubber wedded to glass fibers, exhibiting extremely good low and high temperature resistance, and also with aluminum yarns as a means for dissipating heat in tire use.

In the non-woven fabrics field, announcement was made of several new plain and printed versions of materials said to be usable as outerwear and featuring washability, good draping and sewing qualities and dimensional stability. Nylabond was the name given to a new, light-weight industrial padding composed of nylon fibers bonded with phenolic resins. Air and watertight foam lining materials were being sold in Switzerland for use as linings to be attached to fabrics for all-weather clothing as well as for life-saving vests, bed underlays and airplane berth coverings.

Testing Methods and Equipment

There were few new American testing instruments or methods disclosed in the literature during the past 12 months. Among those publicized was an improved Scott incline plane serigraph tester with an instant-return feature to facilitate use for breaking strength tests and a pendulum attachment for a twist counter by the same manufacturer to simplify the analysis of single yarns. The U. S. Testing

Co. offered a Universal Stiffness Tester, applicable to dissimilar materials and suitable for determining the effects of treatments and coatings.

An accessory for the Micronaire device was said to increase operation efficiency by up to 40 per cent. The Speedar was described as a new high-speed Arealometer for the rapid determination of fiber fineness and packing modulus. The combination pilling and wear tester offered by Fabric Development Tests was further modified and improved last year. Custom Scientific Instruments Inc. went into production of the Electro-Static voltmeter designed by the Institute of Textile Technology.

A novel cross-sectioning slide of thin Plastocel carbon-impregnated acetate plastic was recommended for use in making fiber cross-sections and for laboratory chemical treatment of cotton fabrics, details were published of an apparatus consisting of a cylinder around which 8x10 inch samples were wrapped. Developed at the North Carolina State College department of textile research the Draftometer combined mechanical and electronic features in an instrument to measure drafting forces in sliver and roving.

American journals carried reports on the evaluation and comparison of yarn evenness testers, a dynamic yarn-break test to predict weaving performance and the effect of nuclear radiation on yarn strength; also, a rapid method for determining the density of chemically modified cotton and an instrument for measuring fiber crimp. Research by University of Southern California scientists indicated that measurement of detergency by reflectance may give erroneous results due to change in carbon particle size distribution, and it was suggested that consideration be given to microscopic tehniques or radioactive tracers. Other research workers investigating detergency measurement using artificially soiled cloths concluded that there is no substitute for actual performance tests under practical conditions, the laboratory results being of prime value for screening purposes only.

From laboratories of the British Rayon Research Association came a Speedo-tex stroboscopic type instrument for use in mills to determine speed of yarns in motion, the revolution of spindles, gear wheels or shafts, and a new version of electronic yarn tension recording equipment. English journals published a description of a newly designed instrument for determining tear strength, permitting accurate determinations by single rip, tongue or trapezoid methods, a collective yarn testing method for breaking 100 threads at once, and an instrument to estimate wool fiber cross-sections. More complete data on a simple test to give a "duty factor" as a measure of fabric serviceability, as determined by workers at Courtaulds' Ltd. appeared in the literature in January and a new type of testing machine, the BFT Mark II, was reported as being suitable for measuring resistance to flexing and to ball penetration on resin-finished rayon staple fabrics. From England, too, were reports of a new laboratory dyeing machine featuring various holders for yarn, piece goods or bulk fiber and a cloth profile recorder to measure pick spacing in thick and thin places, to show change of pick spacing at pirn changes and to detect varying degrees of pebble in crepe fabrics. Of German origin were a pressing tester for determining dimensional changes in fabric shrinkage and the Statometer, a portable, battery-operated static meter.

During the past year the Dutch Enka Co. disclosed a technique for evaluating yarn liveliness, derived from the Shirley Institute "snarling test," and instrument operating

on the principle of a chain balance for fiber crimp measurements, a twist irregularity meter for tire cord, and means for determining the voluminosity of yarns.

Organization and Research Institute Activities

The National Cotton Council, following the pattern established several years ago, sponsored a cotton research clinic in February and a chemical finishing conference in September. The former highlighted research reports and discussions of the newest developments in cotton fiber processing and testing, while the latter emphasized progress in the chemical modification of cotton and fabric finishing. At the annual meeting of the Textile Research Institute papers were presented on the mechanical properties of fibers, chemical structure of textiles, a study of the soiling of carpet fibers and the effects of heat treatment of Arnel cellulose triacetate yarns and fabrics.

Representative of the important part played by our textile school research departments, the North Carolina State College School of Textiles released for publication details of the carding project sponsored by six mills several years ago, describing methods by which appreciable reduction in card waste could be achieved. A record attendance was reported for a new course in Parachute Technology offered at M.I.T.

Committee D-13 on textiles of the American Society for Testing Materials was active in studying test methods for stretch yarns, crimp, stiffness, and snagging and shrinkage in laundering, as well as in the investigation of analytical test methods of some of the newer synthetics in blends. The same organization sponsored the Marburg Lecture presented by Dr. Walter Hamburger who advocated the application of engineering principles to fabric improvement. The annual A.A.T.C.C. convention featured technical sessions on a variety of dyeing and finishing problems.

The Celanese Corp. of America announced plans to establish complete development laboratory facilities at Charlotte and the Rayon & Acetate Producers Group initiated a research program directed at improving finished rayon and acetate fabrics. The Textile Research Institute made plans for providing additional space at Princeton.

In England new research laboratories were opened by Courtaulds' Ltd. at its Coventry plant and also by British Enka, while the Textile Machinery Makers Ltd. prepared for further expansion of facilities.

Along with the application of research to improve the old and create the new, it is gratifying to note a growing interest in the establishment of standards of quality to insure consumer satisfaction. The Avisco Integrity Plan of the American Viscose Corp. proposes to provide an incentive for the production of serviceable fabrics and the Bishopville Finishing Co. announced adoption of the American Standards Association L-22 end-use standards for rayon and acetate fabrics. The National Association of Shirt, Pajama and Sportswear Manufacturers disclosed plans to label fabrics in five categories, ranging from "completely washable" to "dry clean" and a group of New Jersey dyers organized to improve dyeing and finishing.

Sponsored jointly by the National Federation of Textiles Inc. and the Textile Distributors Institute Inc. an official system for grading man-made fiber fabrics and blends with other fibers and silk was released recently.

Summary

Whether it is because of their shortcomings or because of their growing importance more and more attention is being focused on research pertaining to the improvement of the man-made fibers and their processing into yarns and finished fabrics. Consumer criticism of fabrics which have not lived up to overzealous advertisers' claims is not going to hold back their progress, but is stimulating further and more intensive research. Like the young married daughter running back to mother, there will always be recurring style trends in fabrics and frequent returns to mother cotton, silk and wool. But marriage is a well-proven institution, and the newlyweds in the form of man-created fibers are going to end up with a long, happy life together—and go on adding to their families, even though they do not all turn out to be geniuses.

To select the outstanding fiber and fabric developments of the year is more difficult than choosing an All-American football team. Those which reached maturity in 1955, even though they were born earlier, include wash-and-wear fabrics of 100 per cent synthetics, Dacron and cotton blends and 100 per cent cotton, Orlon-Dynel pile "fur-like" coatings, Acrilan and Orlon blankets, nylon tarpaulins, rayon tufted carpeting, stabilized finishes for rayons, metallic yarns and solution-dyed fibers and yarns.

Accomplishments in chemical, dyestuff and mill finishing processes and equipment are not singled out because each is a contributing factor in the developments mentioned above. The trends are clear—more versatile equipment for handling a variety of fibers and staple lengths, larger packages and fewer operations in converting fibers to yarns, simpler and speedier weaving machines, more efficient wet processing, improved color-fastness, controlled shrinkage and tailor-made finishes to suit specific end-use requirements.

Research is a versatile performer—it gave us something new yesterday, improves it today and tries hard to make it obsolete tomorrow.

Specs Approved For Institutional Textiles

The American Standards Association has announced that specifications for institutional textiles have been approved as American standards. Clifford Gilliam, chairman of the committee which developed the standards, pointed out: "These standards, the first national standards for performance of institutional fabrics and products, will be of great assistance to both wholesale distributors of textiles and buyers for institutions. We had the co-operation of mills and converters and their technical advisers to assist us in laying the foundation for various end-uses," he added. Mr. Gilliam is chairman of the research committee of the American Hotel Association.

The new standards cover furnishings such as bedspreads and upholstery; utilities such as bath mats, towels and shower curtains; and uniforms and work clothes. The American Hotel Association furnished administrative leadership as sponsor of the L24 project on institutional textiles. The standards were established to provide a set of test methods to establish the minimum performance requirements for institutional textiles. They are purely functional and do not in any way restrict fashions or styles. Nothing in these requirements keeps a manufacturer from adding a "plus factor" to his goods, the A.S.A. points out.

Dixie—Land Of The Golden Fleece?

— A Staff Report —

COUNTER to the national trend, sheep production is doubling in such states as South Carolina, Georgia and Alabama, and may redouble in another year. The Southeast's first two wool combing and scouring plants, both in South Carolina, represent an estimated potential of $60,000,000 for sheep raisers in the area. These two plants have the capacity for the wool shorn from 15,000,000 sheep. Meantime, the nation's woolen and worsted industry continues to relocate in the area, and so does the old-line carpet industry.

On the Western ranges sheep production has been steadily declining, due in large part to low-priced foreign wool imports and labor shortages. But in Dixie much acreage has had to be taken out of cotton production, and grasses have been developed that provide lush grazing almost all year round. Increasingly the region's farmers are becoming part-time shepherds. And the lambs beginning to gambol over Dixie pastures come to market size sooner than their Western cousins.

Against such a backdrop of industrial and agricultural change the port of Charleston, historically associated with cotton, recently inaugurated its first annual Wool Week celebration, with a fashion show, coronation of a wool princess, and all the other trimmings of such fetes. In the past the city of Charleston has been widely known for its Azalea Festival in the Spring, but it's now planned, if possible, to make the Wool Week show at Charleston as important and significant to the wool industry as the annual Cotton Festival in Memphis, Tenn., is to the cotton industry.

The United States does not, of course, produce nearly enough wool to fill the domestic demand. Domestic sheep production in recent years hasn't kept pace with the rest of livestock production. In 1954 Congress enacted new legislation offering new financial inducements in an attempt to get the U. S. wool output up to at least 300 million pounds a year. The 1954 wool clip was only 229 million pounds.

Being mapped as a part of the over-all program is a multi-million dollar wool and sheep products advertising program, slated to get under way in 1956, and financed by withholding of one cent a pound from the shorn wool incentive payments the government makes under the 1954 law.

The 1954 Agricultural Act gave the Secretary of Agriculture authority to subsidize wool growers directly from the Treasury and the 1955 subsidy, to be paid in 1956, was an average of 62 cents a pound on the 1955 clip, compared with a 1954 floor of 54 cents under the now-discarded loan program.

Under the old price support operations the government acquired a substantial quantity of the wool clips and the approximately 150 million pounds of government-owned wool is to move into consumption channels gradually through competitive bid selling, the monthly sales not to exceed a twenty-fourth of the Nov. 1, 1955, inventory.

The rapid revival of sheep raising in the Southeast, due in part to proximity of new processing plants, promotional efforts by various organizations interested in agricultural development, and the void left by sharply restricted cotton acreages, may contribute substantially in the end to boosting U. S. wool output.

In recent years sheep production has dropped to a very low level in the Southeast, particularly in South Carolina. One drawback to sheep production in the Southeast for many decades has been the diseases to which sheep are susceptible. Another menace has been roaming dogs.

In fact, nowhere has domestic sheep production kept pace with the rest of the livestock industry. Part of the decline in sheep raising in recent years is attributed to the many difficulties which raisers encounter in bringing the animals to market weight. Sheep are particularly susceptible to pneumonia, scours, shipping fever and enterotoxemia, and such diseases have been responsible for heavy economic losses.

The advent of the age of "miracle" drugs is changing all that, however. Early research in the use of antibiotics in poultry and swine rations—and later, with calves—showed dramatic results that are now very commonplace. It took more recent research work at experiment stations throughout the country and field trials in commercial feed lots in major cattle and sheep raising areas to show that the same spectacular results can be obtained with sheep and lambs by the continuous use of aureomycin (chemical name, chlortetracycline) in the ration from start to market.

Incidence of respiratory and intestinal diseases is lowered, as is mortality and morbidity. And ranchers in the large sheep-raising areas report they receive greater returns per animal through increased weight gains, better feed conversion and earlier market dates. Ranchers using the new feeding technique in such areas as Idaho and New Mexico and others report they are able to market their lambs and sheep in 30 days less than the usual time and get better prices too.

Such important developments and changes in the care and management of sheep production, plus other factors, are tending to revive production in the Southeast on a really spectacular scale.

For instance, in Georgia 16 experimental sheep farms have been set up over the state, the cost largely borne by

the Citizens & Southern National Bank of Atlanta, which is financing Georgia farmers in importing enough sheep to better than double the state's 1954 sheep population of about 22,000. Mills B. Lane, Citizens & Southern president, who has been the guiding hand behind the Georgia sheep development program, expects Georgia to have a sheep population of 500,000 by 1960.

Here and there other organizations, including the meat packers, are pushing programs to spur sheep raising in the region. One of the large meat packing companies is reported to be providing credit for Alabama farmers to buy feeder lambs for fattening and agreeing to purchase the same fat lambs next Spring at prevailing market prices. About 50,000 lambs have been ordered, and this will more than double Alabama's sheep population which was about 33,000 at the beginning of 1955.

Back in 1880 there were over a quarter million head of sheep in South Carolina. By 1954, however, this sheep population had dwindled gradually to around 4,000. However, by last Spring some 3,300 ewes and 73 purebred rams had been brought in and placed over the state as foundation stock and these, with their offspring, have considerably more than doubled the state's sheep population in a year.

Greatest spur to the revival of sheep raising in South Carolina has been the Wellman Research Project, which stems from the fact that the Southeast's first wool combing and scouring plant was built in 1954 at Johnsonville, in this state.

While there is a surplus of wool combing capacity in the United States, Nichols & Co., Boston topmakers, decided to build a combing plant in the South, largely from the standpoint of convenience in serving Southern mills, the number of which has increased spectacularly since World War II.

The Johnsonville plant, operating as the Wellman Combing Co., has an annual capacity of 80,000,000 pounds of grease wool, and the wool it processes comes through the port of Charleston from all corners of the globe. At the site of the new plant, its president, Arthur O. Wellman, established a demonstrational sheep farm to show South Carolina farmers the advantages of sheep raising as a supplemental source of income.

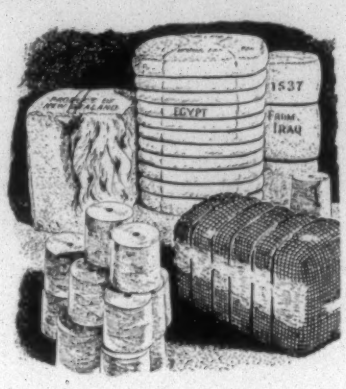
The project is being directed by livestock experts at Clemson, the state's land grant college. For the project Polwarth sheep were imported from Australia. This breed was chosen because the wool is long and dense. The purpose is to develop, through cross-breeding, a sheep well adapted to the Southeast, from the standpoint of both lamb production and wool.

Additionally several thousand of the Rambouillet breed have been brought in from Texas and sold to South Carolina farmers at cost, and several thousand more are on order. It is estimated farmers will receive about 25 per cent of sheep income from selling wool and 75 per cent from selling lambs for meat.

Sheep production is also on the increase in neighboring North Carolina. The North Carolina lamb crop as of July 1, 1955, was reported at 44,000 head, a 4.8 per cent increase above the 42,000 saved over for the same period of 1954 and 37 per cent above the ten-year (1942-53) average. Breeding ewes on hand as of last Jan. 1 were estimated at 40,000 head as compared with 36,000 in 1954.

Following by a matter of months the construction of the big, one-story, 800-foot long Wellman processing plant at Johnsonville, Amedee Prouvost & Co. of Roubaix, France,

built a similar plant at Jamestown, in Berkeley County, known as the Santee River Wool Combing Co. Nichols & Co. and the French firm are two of the largest wool top manufacturers in the world. Amedee Prouvost & Co., with plants in France, South Africa and South America, also operates the big Branch River Combing plant at Woonsocket, R. I., which it established in 1924.



Before World War II the Southeast had only about five per cent of the nation's woolen and worsted mills. Post-war growth boosted this to about 15 per cent. The trend is continuing, with several large mills under construction or in the planning stage.

At Barnwell, S. C., Textron is building a one-story, air-conditioned plant with 528,000 square feet of floor space, to produce woolen goods, and it is expected to begin operation early in 1956. Operations will include spinning, weaving and finishing and the plant is intended to recapture the position formerly held by American Woolen Co. in the staple and semi-novelty fabric field when it concentrated its operations in New England.

J. P. Stevens & Co. is also currently building a large new woolen mill at Dublin, Ga. The Albany Felt Co., which has several plants in the East, has just announced plans to build a 100,000 square foot plant at St. Stephen, S. C., to make felt for paper machines. Its operations will include wool carding, spinning and finishing. It is in close proximity to the Wellman and Santee Wool processing plants. A woolen dye operation is projected for Sumter, S. C., by Model Dye Southern Inc.

Meantime, the trend of the carpet industry to relocate in the South continues, with the recent announcement of Bigelow-Sanford to build a modern velvet carpet plant at Landrum, S. C., which is expected to be in production in the second half of 1956. It is to be equipped with looms formerly used at Bigelow's Amsterdam, N. Y., mill which is now in process of being shut down. A little over a year ago Alexander Smith Inc., closed permanently its huge Yonkers, N. Y., plant, bought a new Liberty, S. C., plant from Julius Kayser & Co., doubled its capacity, and now weaves and finishes velvet carpets there.

Decline In Mill Failures

A marked decline in failures of textile mills during the first ten months of 1955 is reflected in figures compiled by Dun & Bradstreet Inc. According to the report, there were 50 failures in this category in 1955, with total liabilities of $4,459,000. This compares with the 90 failures with total liabilities of $9,559,000 in the comparable 1954 period.

Waste Collection By Vacuum System

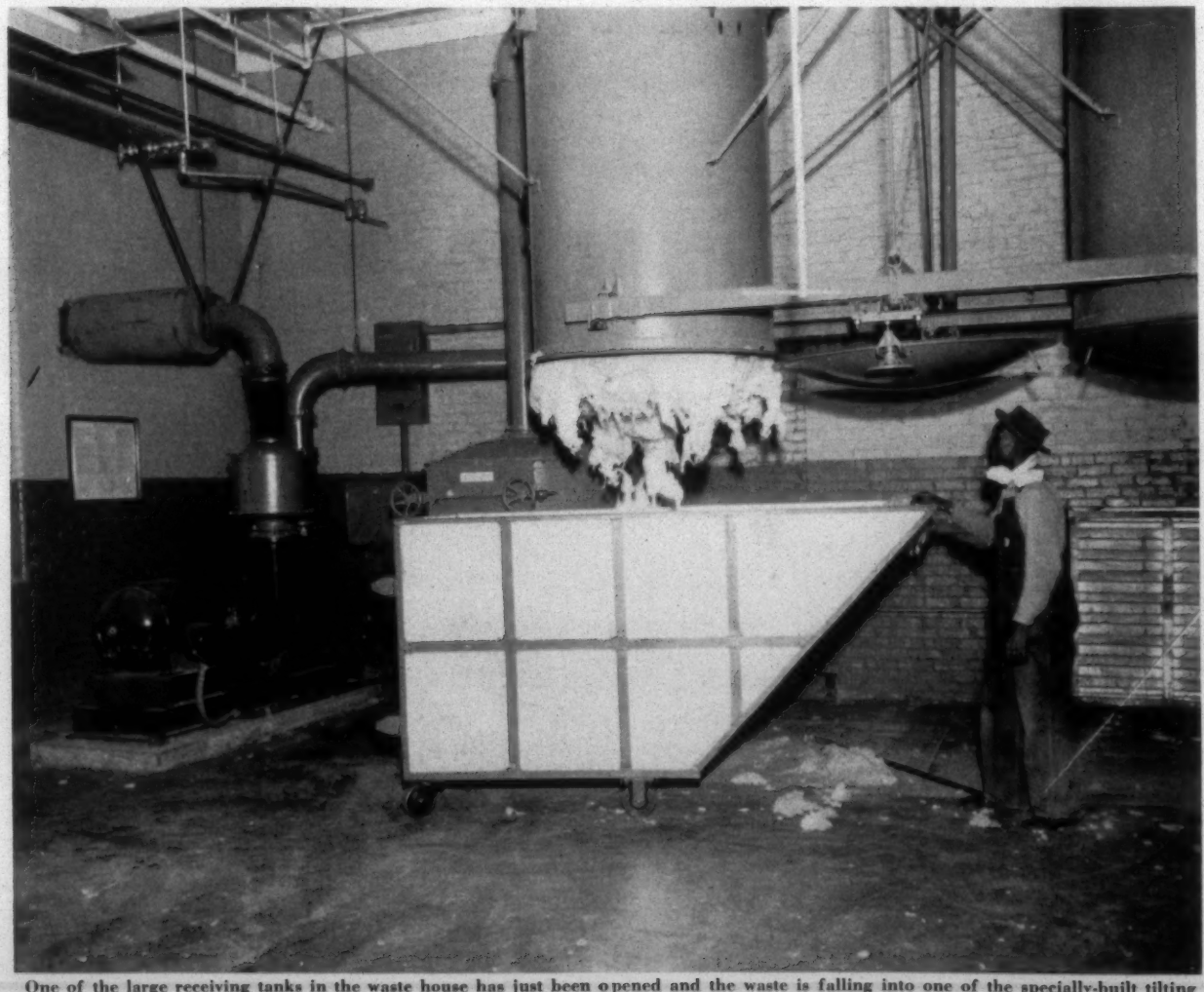
Ducts running underneath floors to various departments transport waste to large receiving tanks in the waste house.

IN line with its long-range modernization program, Joanna (S. C.) Cotton Mills Co. has completed and put into operation a new waste collection system. Built and installed by Abington Textile Machinery Works, North Abington, Mass., the system includes vacuum card stripping for Joanna's waste cards and a central vacuum waste system servicing all departments.

The hub of the collection system is the waste house. Vacuum air lines connect it with: (1) the waste cards in the drapery department (which are equipped with Abington's vacuum card stripping system); (2) the picker room; (3) the card room; (4) the comber room; (5) the spinning room; and (6) the weave room.

A 75 horsepower centrifugal pump in the waste room provides the suction, and waste from each of the departments is collected on a regular schedule. Waste dumped into outlets at collection points in each department is conveyed through the vacuum lines to a large receiving tank in the waste house. There are two such tanks to insure that the collection schedule won't bog down due to a full tank at the receiving end.

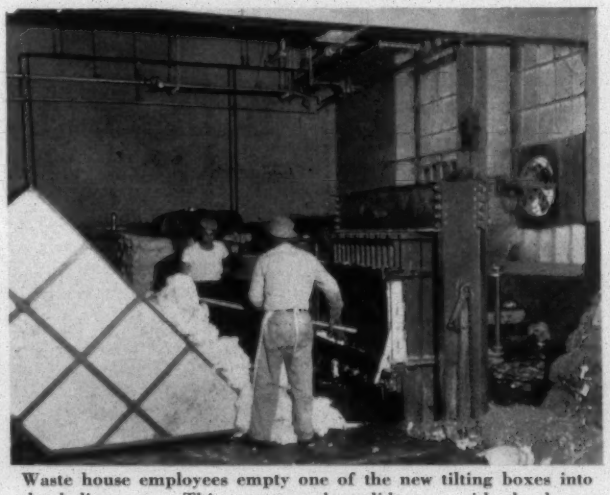
At Joanna the system collects some 40,000 pounds of



One of the large receiving tanks in the waste house has just been opened and the waste is falling into one of the specially-built tilting dump boxes. In the background *(left)* is a 75 horsepower centrifugal pump which generates the vacuum necessary to pull the waste the long distances through the six-inch steel pipes.

Comber noil is removed from under the combers by use of long vacuum tubes. This operation must be performed every two hours to prevent the noil from piling up under the combers.

Clearer and dust roll waste is dumped into the Abington system in the card room. The waste is carried to the receiving tanks in the waste house in less than a minute's time.



Waste house employees empty one of the new tilting boxes into the baling press. This new type box did away with the heavy lifting of Joanna's old square-type boxes.

Spinning scavenger is dumped into the vacuum ducts in the spinning room. Sweeps and clearer waste will follow later to keep waste from becoming mixed.

Card fly is removed by this waste house employee from one of Joanna's 294 cards. Ducts running beneath the floor quickly convey the card fly to the waste house.

Waste cards in Joanna's drapery department are cleaned by the Abington card stripping system. Note the clean appearance of the doffer to the left of the stripper.

waste a week. The system could handle much more than that. Just how much more is not known, but Joanna uses it only about six to eight hours a day. The 75 horsepower centrifugal pump provides more than enough vacuum pressure. In fact, there is enough vacuum in the lines to pull pop bottles, bobbins, tramp metal, etc., through in case these items ever get into the lines through carelessness. Pop bottles break into a million pieces by the time they get to the waste house. In one instance, it was reported that a curious alley cat got sucked into the main line header of a similar installation at a mill in Alabama. By the time it reached the collection tank at the end of the line, it was about 12 feet long, the report goes.

There is little danger of lines getting stopped up, Joanna reports, and if that does happen it usually occurs at joints in the line. The line can be easily dismantled and unclogged in that event. Operators should be careful about what goes into the line, however. A large enough piece of tramp metal, traveling at a good clip, could in some instances hit an elbow in the line in such a way as to go right on through it. Joanna had that happen not too long after the system went into operation.

In setting up the system at the time it was first put into operation, Joanna thought it advisable to use a rigid timetable to designate precisely when each department would use the system. In that way there would be no danger of mixing wastes from the various departments. Under the schedule, the weave room, for example, would have use of the system from 7:00 a. m. to 7:10 a. m. No other department dumped waste into the outlets during that period. Then from 7:15 to 7:20, comber waste only would be collected—and so on through each department.

The schedule was found impractical, however, since as a rule it would only take any one department a matter of two or three minutes to dispatch all its waste. Then the waste house operators would have to wait until the schedule called for the next department to send its waste. Then too, departments had no way of knowing for sure that the system was clear and ready for them. It was sometimes necessary to make trips all the way to the waste house to make sure everything was in order.

To get around this, Joanna installed an inexpensive two-way intercommunication system connecting the waste house with all departments. Now with the flick of the switch on the call box, the go ahead signal from the waste house can be given and nobody is in doubt. The call boxes have speeded up the operation considerably. Some semblance of a schedule is still maintained, though, for the sake of convenience. Most of the time collections are ahead of the skeleton schedule, and waste house employees can go ahead with baling and other duties without interruption.

Waste is collected as follows:

Comber waste	every two hours
Strip waste cards	three times a shift
Weave room sweeps	once a shift
Spinning room sweeps	once a shift
Card room sweeps	once a shift
Picker motes	twice a shift
Spinning scavenger waste	once a shift
Spinning clearer waste	once every other day
Card strips	twice a shift
Card fly	once a shift

Future plans at Joanna call for an addition to the opening room large enough to house the collection tanks and the baling press. This will eliminate having to take the bales of reworkable waste from the waste house to the opening room for reworking.

THE MILL OF TODAY

By ROBERT Z. WALKER

Part 43 – Fundamentals of Drafting (Section One)

THE drafting of the cotton fiber in connection with the manufacture of cotton yarn has always been the topic of greatest interest to textile engineers as well as to practical spinners and students of the industry. Except for the radical developments which have taken place in the last ten years, the limitations of the available methods and appliances for this particular work have long been known. The perfection of systems which would embody the effectiveness, simplicity and investment return of the long established systems extended well over a hundred years.

In 1823, Phillip Chell, an Englishman, filed a patent in the British Patent Office which described the idea now embodied in the "Casa Blanca System" of Long Draft but the methods which he proposed to employ were entirely different. Since the filing of this early patent it is quite safe to say that there have been several hundred patents issued to cover improved drafting arrangements, but only since 1912 has the interest in this subject been revived. Since that date, much progress has been made and there are a number of systems of long draft which are practical and commercial successes.

The development of long draft, and its vital importance in the economics of the modern textile industry, has led to a complex situation in which specific drafting elements are designed for specialized uses. Because of this technical and economical complexity it is relatively easy to become confused by the intricacies of design and to overlook the basic reasons which still guide the use and selection of the system best suited for a given set of mill conditions. In order to prevent misunderstandings, and to clarify the judgment of the man in the mill concerned with the use of this type of equipment, the basic fundamentals and principles of long draft are discussed in this article.

Naturally, the first question which arises concerns a definition of long draft. It is quite impossible to draw a fixed line which will divide ordinary drafts from "high or long drafts." As a matter of fact, the name "long draft" or "high draft" is viewed by some a misnomer which inaccurately expresses the objects sought by the use of the arrangements for producing the desired results. A suggested better name would be "thorough drafting" or "controlled drafting," as the object sought is the control of the fibers to a

greater degree of accuracy at the critical drafting period than is possible with the ordinary three-roll system.

Further, with the ordinary three-roll system for example, with long staple cotton and fine rovings, it was quite practical and considered good form to use a draft of 15. However, with coarse roving and short cotton a draft of just half this amount would practically represent the efficiency limit. It is evident that the term "long draft" as applied to the first case would be incorrect but would fit the second case accurately.

Extending this even further, long draft for many years meant the use of drafting systems such as the Roth or older type of Casa Blanca which allowed the use of drafts ranging from 16 to 21 for normal carded yarns. These drafts, considered in comparison to the allowable drafts obtained with the conventional drafting element of three rolls, were "long drafts." Today the same counts can be spun, using modern drafting elements, with drafts ranging as high, or higher than, 40. Under these circumstances and with this comparison as a bench mark then the drafts of 16 or 21 can no longer be considered as really true long drafts. Equipment changes with the times, and standards of mill efficiency and production must change in tune with the dynamic advance of the industry.

Although accepting the principle of long draft as an essential point in organizing a modern mill, it is still in order to examine and evaluate the proposed system. The element should favorably correspond with the following arrangements:

(1) The ability to maintain close settings of the drafting rolls, particularly where the main drafting takes place, is of prime importance. With this feature lacking, the ability to attain effective fiber control will be impossible.

(2) The ability to control the maximum number of fibers in the roving being drafted. In order to do this it is essential that the design be so arranged that the longer fibers will slip through without damage or breakage, while the short fibers will be fed to the drafting rolls in a smooth and even manner and with a minimum amount of feathering. The added strength of yarns spun on a satisfactory long draft system comes from the long fibers which are not broken while being drafted.

(3) The system shall be free from intricate or delicate parts which are unusual in design or strange and unwieldy for the operatives.

(4) The mechanism must be of simple design and easy to clean, and should require no more adjusting than the usual drafting systems.

(5) The system should be able to draft a given grade of cotton in a satisfactory manner, with a significant increase in draft over the regular system and without deterioration either in quality of the yarn or decrease in breaking strength.

(6) The production of the frame equipped with the long draft system must at least equal, if not exceed, the production of a frame having the usual drafting system.

(7) The system must permit the spinning of a wide range of cotton, both as to character and staple, with the minimum of changes in setting and roving. In fact, the system should be competent to handle all commercial staples and cottons on the same units.

The inherent characteristics of the fiber to be drafted, and its behavior during drafting, must be recognized in attempting to manipulate or evaluate any drafting element. This study, while complex and lengthy in itself, is sum-

marized during the remainder of this discussion. Without this background it is difficult to theorize regarding drafting, or to attempt to draw distinctions between one drafting element and another.

Effects of Raw Material on Drafting—The spinning value of any cotton varies with certain general characteristics. The length and thickness of the fiber are both important but the ratio of the length to the thickness is a fact to which sufficient attention has not been paid. The length is generally regarded as the determining factor of the spinning value and it is safe to say that the effectiveness of the grip of one fiber on another is largely determined by the relative lengths. The effectiveness of the grip of several fibers which are bound together by twist will vary along the length of each fiber, and, as the yarn under strain is due to slippage of the fibers instead of their breaking, it is quite safe to conclude that the strength of the yarn is due to the fiber length. But whether the breakage or slippage is the cause of yarn rupture, yarn strength is largely due to fiber length and the strength of the yarn increases at a greater rate than the increase in fiber length.

Thickness—The thickness of the fiber affects the spinning quality insofar as it affects the number of fibers associated together . . . it affects the resistance to drafting and the compactness of the yarn under twist. A coarser fiber will not draw as smoothly as a finer fiber and the resulting yarn will show a greater fiber displacement and greater fuzziness.

Natural Twist—This property of the cotton fiber is to a great degree responsible for cohesion among the fibers and its effectiveness in this respect will be governed by the extent and nature of the natural corrugations in the fiber as a result of natural twist. The strength of the yarn also depends on the interlocking of the fibers. In normal fibers, the surface corrugations formed by the twist will be deeper in the thicker fibers and will have a greater interlocking effect than is possible in a thin fiber. On the other hand, the fiber twists are from purely physical causes and likely to be fewer in the coarser fiber than in the finer. In drafting, especially on the drawing frame, the finer fibers will be kept under better control and the improved compactness and interlocking effect resulting from this will generally result in the production of a stronger and smoother yarn from the finer fiber than from the coarser, the relative fiber strength and length being equal.

Strength—The ultimate strength of the cotton fiber is very closely related to its thickness or sectional area. The ultimate strength of the fibers which are bound together in a yarn, in such a manner that they will break rather than slip, will affect the strength of the yarn, and there are some fibers so related in this manner in almost any yarn. Made with the normal amount of twist, the number of fibers so related will vary with the length and natural twist of the fibers as well as with the amount of twist in the yarn. The yarn which has the longest fibers and the fiber with the greatest amount of natural twist will, therefore, have greater resistance at the breaking point.

The strength of the yarn, therefore, is directly affected by the ultimate strength of those fibers which are so bound together as to break before they slip, and the resistance offered to the sliding amongst those fibers which will slip before they reach the breaking point. In soft yarn there will be few of the former, the number increasing as the twist in the yarn increases.

For this reason those cottons which are strong and which possess a high degree of mutual fiber friction are used in the harder twisted warp yarns where strength is an important consideration.

In all these features, departure from a standard is inevitable and is always present to a varying degree, and whether in length, thickness or strength, it is important. The irregularity is due to obscure causes in the process of plant growth and fiber development.

Among the most important of these variable features is the irregularity in staple length, which indicates the approximate variation present in a sample of cotton, as determined by a fiber sorter. Variations in thickness, amount of natural twist, strength of the normal fiber and the amount of thin-walled immature fibers, as well as over-ripe and broken fibers, must be taken into account in determining the suitability of a given fiber for spinning.

Plans Move Ahead For National Cotton Week

National Cotton Week for 1956, which will be held next May 14-19, will open its second quarter century as the annual merchandising event of the American cotton industry.

Improved Enzyme-Converted Warp Sizes

By H. C. OLSEN, Supervisor of Textile Service, National Starch Products Inc.

NEW chemical modifications of starch and new methods of preparation have been so much in the foreground recently that it is easy to overlook the possibilities of improvements in older methods. One of these, which is discussed here, is the use of enzymes to convert ordinary thick-boiling starches to the proper degree of fluidity for warp sizing.

For a number of years such enzyme-converted starches provided a major portion of the total starch used for warp sizing. However, because of the difficulties encountered by textile mills, primarily because of lack of experience and inadequate controls, enzyme conversions were gradually and to a large degree replaced by thin-boiling starches, in which the desired fluidity was obtained ready-made directly from the starch manufacturer.

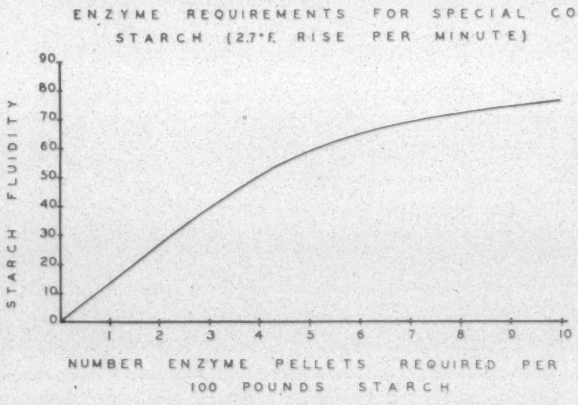
These thin-boiling starches are made from pearl starch by treatment with mineral acid, neutralizing, washing and filtering. In addition, they require more rigid quality controls, demanding, among other things, a very close viscosity tolerance. Many textile mills felt, and many still do, that the convenience, quality and uniformity of thin-boiling starches were worth the additional cost of the treatment and controls required to make them.

However, the textile industry has always felt the pressure to keep costs to a minimum and the recent development of new equipment, such as homogenizers and jet cookers, which reduce the viscosity of thick-boiling starches by mechanical breakdown of the starch, has led to a renewed interest by the textile manufacturer in converting pearl starch to the required fluidity in his own plant. This in turn, however, has led to the development of improvements in the old enzyme conversion process which in many cases seem to offer better end-results for the textile mill without requiring new investment in machinery or equipment.

The improved enzyme conversion derives from the relatively recent availability in the market of new enzymes with excellent uniformity and from new pH controlled starches with uniform enzyme demand now produced by some starch manufacturers. The degree of uniformity is such that, used in conjunction with automatic cooking controls, they give uniform and reproducible conversions from shipment to shipment and from batch to batch. Moreover, both convenience and the consistency of results are improved by the use of the enzyme in pellet form so that the fluidity of the starch solution may be controlled simply by the number of pellets used per batch. These enzyme pellets are available at a very nominal cost, usually only a few pennies per batch.

The procedure is simple, consisting simply of the addition of the required number of enzyme pellets to a slurry made with the specially controlled pearl corn starch and setting the cooking controls at pre-determined levels The starch manufacturer, prior to the initial trial, will work with the textile mill to determine the number of pellets and cooking control settings required to convert pearl corn starch of a given pH to the desired fluidity. The type of enzyme used, rate of temperature rise, and sometimes other variables must be considered. Those starch manufacturers who provide the special pH controlled starch maintain technical service departments whose personnel are thoroughly familiar with these problems and procedures.

In a typical case, assuming a temperature rise of 2.7°F. per minute and using a typical enzyme compound and a pearl starch with a pH of 7 obtained from a particular manufacturer, the number of enzyme pellets per cwt. of starch required to achieve any given fluidity as shown on the following graph:



If a different temperature rise is used, the quantity of enzyme must be adjusted since a faster temperature rise does not provide as much time for conversion to take place as a slow rise. In the case given above for example, the quantity of enzyme must be multiplied by the factor shown below for a temperature rise different from the 2.7°F. per minute on which the graph is based.

Conversion Rise in Degrees F. per Minute	*Multiplying Factor*
0.5	
1.0	0.7
1.5	0.8
2.0	1.0
2.7	———
3.0	1.1
3.5	1.2
4.0	1.3
4.5	1.4
5.0	1.5

For example, the graph shows that three pellets are required to convert 100 pounds of thick-boiling starch to

40 fluidity cooking at a temperature rise of 2.7° F. per minute. If the plant cooking rate is 4° F. per minute, then (from the above table) 1.3 times 3, or nearly four pellets are required. Variations in starting temperature are unimportant because the starch does not begin to convert until about 160° F. A 20 to 30-minute rise will assure good control. The size temperature should then be maintained at close to the boil for about 30 minutes to inactivate any remaining enzyme.

As indicated above, the quantity of enzyme required is also affected by the pH of the pearl starch. Generally speaking, about ten per cent more or less should be used for each pH unit by which the pH of the starch being used is less or more than 7, respectively. For example, if the pearl starch has a pH of 8, the quantity of enzyme indicated by the above graph and table should be *reduced* by ten per cent. If the pH is 5, about 20 per cent *more* should be used.

Laboratory tests have shown that, within the usual warp size range, the quantity of enzyme required is related to the amount of starch used rather than the concentration of the starch solution. That is, in order to reach a given conversion, 100 pounds of starch made up to 50 gallons would require approximately the same number of enzyme pellets as 100 pounds made up to 100 gallons.

Cost is not the only factor which has been turning an ever increasing number of textile mills back to enzyme conversion. Among the other important advantages which may be obtained are: (1) Any degree of fluidity can be obtained, which is not always possible when using mechanical means of breaking down the starch (such as with a homogenizer). (2) Inventory of only one starch is needed to supply the several fluidity grades sometimes required. Enzyme conversion is a very versatile method since one and the same starch will produce a light or heavy size merely by changing the number of enzyme pellets. (3) No additional equipment is required other than the usual cooking controls employed in most mills. (4) A smoother warp with less shedding and higher weaving efficiency frequently results. (5) Higher conversions give greater stability, less tendency to jell and consequently better penetration. (6) Since enzyme conversion is the same process used in desizing, the starch is somewhat more readily removed in the finishing operation.

A Study In Loom Fixing

By FRANK D. HERRING – Part Four

THE primary purpose of this article is to help the loom fixer to become a more efficient worker on his job. It is the general concensus among weaving mill officials that loom fixing is the weakest link in the manufacturing chain of that industry. There are a number of reasons for this. The two main reasons are: First, insufficient care and thought are used when selecting loom fixing trainees. Too many are chosen without due consideration for their all around abilities or suitability for this type of work. Second, improper methods are employed during their training period.

So, the majority of trainees are put on sections with insufficient knowledge of the basic fundamentals of loom fixing and consequently they go about their work in an uncertain state of mind which, of course, produces haphazard guesswork loom fixing. This can be very expensive, because it reduces production and increases the use of supplies.

A big part of the loom fixer's work is the strictly routine things he must do each day, every day, and most of this work—such as setting and timing harness, shuttle bouncing—does not require a great deal of imagination or skill. There are, however, plenty of jobs he is called on to do that do require skill and know-how. Without the proper basic training and considerable experience he is lost and must spend a lot of time searching for a way to do his job. In the meantime, he will usually do a lot of unnecessary work on the loom that will leave it out of fix in more ways than it was when he was called to it. This keeps him behind on his job. The subject of this article will be jobs that are the most difficult for the average fixer. The problems, or jobs, will be named and the causes of the troubles given along with ways and means to fix them.

Throwing Shuttle Out

This can be and usually is one of the most troublesome jobs the loom fixer is called upon to perform, because a number of things can cause it. When a shuttle is thrown out of a loom while it is running, it carries sufficient force to inflict serious injury to any employee who might be within range of it. Also, the shuttle is usually damaged or broken and very often other parts of the loom will be broken by contact with the flying shuttle. It is not only dangerous, but also expensive.

When the fixer is called to work on a loom for throwing the shuttle out, he should check the following things in the order named:

Shuttle	Stroke on picker stick
Reed	Harness setting
Shuttle boxing	Harness timing
Pickers	Backbox plates
Timing of pick	Lay end plates

The condition of the shuttle and the reed are so vitally important they should both be checked carefully every time the fixer is called to work on a loom. The shuttle should be free of rough or splintered places, the bobbin should be tight and in perfect alignment, all the frictions or bristles in good condition and placed properly to prevent losing control of the strand of filling and allowing it to break while the loom is running. Also, if the shuttle is excessively worn, it will sometimes fail to follow a straight course the length of the lay, and thereby be thrown out occasionally. If the reed is loose, or has any forward protruding dents, it can cause the shuttle to be thrown out by deflecting it off its straight course as it travels across the lay.

Shuttle boxing should always be checked first while the

loom is stopped by pulling the shuttle in and out of the box by hand. The shuttle point or knurl should be directly over the center of the picker stick slot in the lay when it comes in contact with the picker. This adjustment is made by moving the back binder, which works on an eccentric bushing, backward or forward. This adjustment or setting will insure the proper delivery of the shuttle from the box and straight passage across the lay, provided all other adjustments which can affect it are right. The shuttle should never be wedged or tight in position when it is pulled all the way up in the shuttle box. While the loom is running, the shuttle should be checked when it reaches the end of its trip across the lay by the check strap and held in position, prevented from rebounding by the spring tension on the back bender and protector rod springs. If the shuttle is wedged tight in the shuttle box between the front and back binders, it will create a delayed harsh heavy pick when the shuttle is driven out of the shuttle box and this will prevent the straight passage of the shuttle across from end to end of the lay. It will sometimes throw the shuttle out.

The reason a delayed or heavy pick is created when the shuttle is wedged too tight in the shuttle box is due to the fact that excessive strain is put on the picker stick, causing it to bend excessively on the pick. This bending of the stick causes the pick to be slightly delayed, picking late, and a late pick causes a harsh heavy pick because the lay is momentarily slowed down in its rotating motion and this slowing down of the lay will prevent straight passage of the shuttle. Also, the excessive bending of the picker stick will cause the picker to be drawn out of parallel with the shuttle point, and this also prevents straight throwing or passage of the shuttle.

An excessively tight shuttle box will not throw the shuttle out on every pick, but it would be much better for the fixer, the weaver and all concerned if it did, because in this event, the fixer would be compelled to fix the loom before he left it. The shuttle travels across the lay between the sheds of warp yarn, and if it does not travel in a straight line, hugging the reed, it will be continually striking the top shed of warp yarn. This will create excessive warp yarn breakage and of course will cause excessive loom stoppage, loss in production and unnecessary additional work for the weaver. So, for the reasons given above, it should be easy to understand why proper boxing of the shuttle is so vitally necessary for efficient operation of the loom. Too many supervisors and loom fixers do not realize this fact.

Placing the Pickers

The pickers should never be put in place on the picker stick before the shuttle is boxed because the shuttle point should be in correct position directly in line with center of picker stick slot in the lay. The center of the picker should be exactly in line with the shuttle point. It is usually necessary for the fixer to cut and bevel the inside surface of the picker, picker head side, to draw it sidewise, backward or forward in order to line it with the shuttle point. If the center of the picker is not in perfect alignment with the shuttle point, the shuttle will not be delivered from the shuttle box on a direct straight course and consequently will be thrown out occasionally.

The picker should also be placed on the picker stick with the center of the picker in exact parallel line with the shuttle point at both ends of the picker stick stroke with the stick at rest at the extreme end of lay and on its extreme forward motion on the pick, or delivery position. If the picker is too high or too low, in relation to the shuttle point, at the position of delivery of shuttle, it will cause the forward point of the shuttle to rise as it leaves the shuttle box, and thereby throw the shuttle out occasionally and this also will cause the shuttle to be thrown against the top shed of the warp yarn and cause excessive yarn breakage..

It may be wondered why the picker being too high or too low will both cause the forward point of the shuttle to rise. If the picker is too low, it will depress the back end of the shuttle and naturally cause the forward end to rise as it is delivered from the shuttle box. If the picker is too high, the back end of the shuttle will be raised clear of the lay end plate and this naturally throws the forward end of the shuttle down and the forward end will rebound when it strikes the race plate and will rise as it enters the opening between the warp yarn sheds.

Immediately after the fixer has put on the pickers, he should check the timing of the pick and the stroke on the picker stick. If he will form the habit of doing this every time he puts on a picker, it will save him a lot of work and worry because if the picker is positioned exactly right and the timing of the pick or the stroke on the stick is not right the loom will not run properly. Some looms are designed to pick when the crank shaft is on exact top center position, but others are designed to pick before the crank shaft reaches top center. So the only safe way to time the pick correctly is to follow the loom builder's instructions for the different model looms.

If the loom is picking either too early or too late, it will cause the shuttle to be thrown out occasionally. Both will also cause the loom to slam off occasionally. If the loom is picking too early, the shuttle will be driven between the warp yarn sheds before they are open wide enough to receive it and this will cause the shuttle to be thrown out. It will also retard the free passage of the shuttle and cause slamming off; also, excessive warp yarn breakage can result. The troubles caused by a late or retarded pick have already been covered.

Setting and Timing the Harness

Most looms fixers know how to set and time the harness properly, but too many are too careless and indifferent about this vitally important part of their job. If both are not checked carefully and fixed correctly, it will cause untold work, worry and troubles for both the fixer and the weaver by causing the shuttle to be thrown out, loom slamming off, excessive warp yarn breakage, overshots, undershots, excessive wear on the shuttle, etc. The harness should be set so that the bottom warp sheds of yarn will just barely clear the race plate when the harness are in wide open position, or in position to receive the shuttle. The top warp yarn sheds should rise to the extreme top position of their workable motions and be on exact parallel lines with each other from one selvage to the other. (Of course, on two harness weaves, there are only two warp yarn sheds, one up, one down. When using more than two harness, they are usually used one shed in down position and the

balance of sheds in up position when they are in open position.)

If the harness sheds are set too high or too low, it will cause the shuttle to be thrown out occasionally. If the bottom shed is too high off the race plate, the forward point of the shuttle entering between the sheds will be deflected upward and will be thrown out occasionally. If the bottom shed is too low, dragging on the race plate, the yarn in this shed will become too slack and sag when this shed of warp rises to top position, and the shuttle will skip over these sagging threads and be thrown out. This, of course, will also cause excessive yarn breakage.

The harness should be timed so that the sheds will be wide open just at the point when the lay reaches front center position. This timing will give the assurance that the sheds will be wide open and give clearance to the shuttle when it enters between the sheds after the pick, and also the sheds will not close on the shuttle before it clears.

Check the back box plates to determine if they are securely tight. If either of them is loose, it will cause the shuttle to be deflected from its straight course across the lay and will cause it to be thrown out. Also, make sure that the lay end plates are tight. If either one is loose, it will rise up out of position on the lay, causing the forward end of the shuttle to rise as it leaves the shuttle box after the pick, and the forward point will sometimes enter the mass of yarn in the top sheds and be thrown out occasionally. This also will create unnecessary warp yarn breakage.

The things recommended herein for the fixer to check and fix will usually stop the throwing out of the shuttle but if it does not, it will then be necessary for the fixer to get his reed square and straight edges and line the back box plates and the lay end plates with the reed and race plates. If either the back box plates or lay end plates are out of line, it will cause the shuttle to be thrown out occasionally. Most or possibly all of the late model looms are built with the lay end plates secured to the lay with bolts which extend all the way through the lay and are secured on the bottom side of the lay with nuts and lock washers. This is a distinct improvement over the older models when the lay end plates were held in place with wood screws and were continually working loose. Anyone using these older model looms equipped with the wood screws would benefit by drilling holes through the lays and securing the lay end plates permanently with bolts.

Bleaching, Dyeing & Finishing

Continuous Bleaching Of Cotton Fabrics With Silicate-Free Peroxide Solutions

By B. K. EASTON, Becco Chemical Division, Food Machinery & Chemical Corp.
and PAUL FELDMAN, Dan River Mills Inc., Danville, Va.

This paper, presented by Messrs. Easton and Feldmann at the 34th national convention of the American Association of Textile Chemists and Colorists, explains how phosphates can be used instead of silicates to formulate stabilized peroxide solutions which do not cause difficulties such as scale formation, tedious removal of silicates from cloth, etc.

SINCE the installation of the first continuous peroxide bleaching range in the late 1930s there has been a tremendous growth in the use of this system. Today there are over 110 continuous bleaching ranges of various types in the United States alone and a goodly number in foreign countries. The ranges in the United States handle well over 60 per cent of all the cotton fabrics being bleached. As you know, the reasons for such a widespread acceptance are many. For instance, there are savings in time, labor, steam, water and floor space. The control is much easier thus giving improved uniformity and far less seconds.

The routing generally followed in the continuous bleaching of all white woven fabrics will consist of a desize operation, sometimes an acid sour, a caustic treatment at high temperatures, and then the bleaching step at high temperature with an alkaline hydrogen peroxide solution. Of course, when processing knitgoods or colored yarn woven fabrics, the caustic treatment is omitted. It is the bleaching step and particularly the alkaline hydrogen peroxide solution we will concern ourselves with here.

Long before the advent of continuous bleaching, sodium silicate was recognized as the outstanding stabilizing agent for alkaline peroxide solutions. It is highly efficient as a stabilizer, is low in cost, and is relatively easy to handle since sodium silicate is available in the form of a concentrated solution. However, under the conditions existing in continuous peroxide bleaching, sodium silicate has several drawbacks, namely, (a) sodium silicate forms insoluble compounds which tend to form deposits on the surface of the equipment and cause abrasion of the cloth; and (b) sodium silicate and the products it may form are usually difficult to remove from the fabric.

These conditions have been lived with as necessary evils

largely because nothing has been found that would satisfactorily replace sodium silicate in the continuous bleaching of cotton. Now there has been developed a silicate-free formula which can replace the present conventional silicate formula in most instances.

The scale problem has been studied for a number of years. Repeated investigations disclosed that chemically the scale, and, incidentally, many of the stains found on bleached cloth, consist mainly of silicates of calcium and magnesium. Then the question arises, "Where does the calcium and magnesium come from?" Usually our first thoughts turn to the water supply. While water can be a large contributor, we have found that the cotton fabrics themselves carry relatively high amounts of calcium and magnesium into the bleach solution. The fabrics which we examined contained calcium and magnesium components, varying from 0.1 to 0.3 per cent of their weight in terms of calcium carbonate. This figure checks with data found in the literature. Mathews notes that cotton will contain as much as 0.2 per cent calcium carbonate and 0.14 per cent magnesium carbonate. Considering that cotton cloth will carry only approximately its own weight of water into the peroxide saturator solution, it becomes obvious that the cloth itself could well be the principal sources of calcium and magnesium.

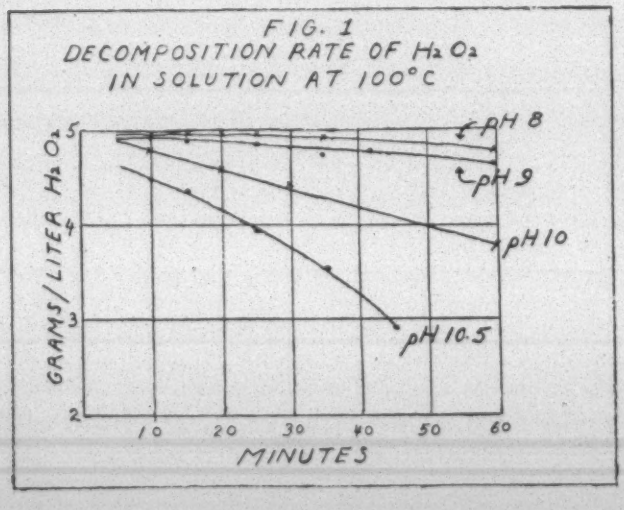
It would look at first as if the easiest method for avoiding the scale deposit would be to remove the calcium and magnesium from the cloth before it is bleached with peroxide and silicate. This could be done by proper scouring. Such a procedure would mean an extra step for some bleacheries. Furthermore, this treatment would give only temporary relief. It is known that acid treated cellulose will quickly reabsorb calcium and magnesium through an ion exchange type of reaction. Although water with zero hardness could be used, we would still be faced with the fact that practically all chemicals contain calcium and magnesium in trace quantities.

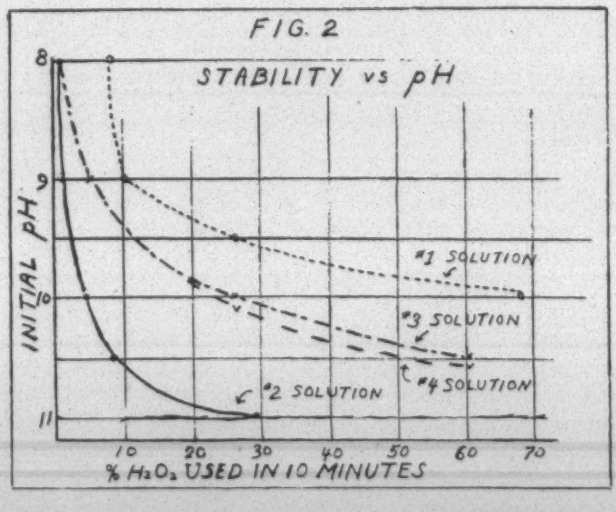
There is serious doubt that the peroxide-silicate system would be effective if calcium and magnesium were completely absent. There is some evidence that it is not sodium silicate, but rather calcium and magnesium silicates which are the actual stabilizing chemicals. If this is true, then the calcium and magnesium silicates which form the deposit are an essential component of the system and cannot be entirely eliminated. We have, therefore, been searching for formulations which would entirely replace the silicates as stabilizers of alkaline peroxide solutions without the tendency to form the scale which is so troublesome. We believe we have found formulations which fill our requirements.

Polyphosphates, such as tetrasodium pyrophosphate, sodium tripolyphosphate, and others, have been used as stabilizing agents for certain types of peroxide bleaching. However, they have not been found entirely suitable for general use in continuous bleaching. Heretofore, ortho phosphates, i.e., PO_4 salts, were considered completely unsatisfactory as stabilizing agents. For example, if we were to examine a solution containing sodium phosphate and hydrogen peroxide with the pH adjusted to say 10.5, we would quickly see that the hydrogen peroxide has a very low degree of stability. For instance, let us assume we have ten grams of disodium phosphate and five grams of hydrogen peroxide per liter, we add a little sodium hydroxide to obtain a pH of 10.5 and then try to heat the solution to 100°C. We would see very soon that oxygen is evolved and by titration we would find that most of the peroxide is decomposed before the temperature reaches 100°C. However, if we were to repeat the experiment, but this time add 100 or 200 milligrams of calcium chloride we see that a precipitate forms which has been identified as calcium phosphate. Upon heating the solution we find that the peroxide decomposes very slowly even at 100°C. The presence of the precipitate seems to be essential for when we filtered the solution the peroxide in the filtrate became unstable on heating. By replacing some of the precipitate to the filtrate, the rate of decomposition is greatly reduced. Thus, it appeared that calcium phosphate might be used as a stabilizing agent.

To continue our work, it was found that we should have some means of providing at least a crude measure of the stability of various hydrogen peroxide solutions. The following procedure was adopted: Ten milligram portions of a peroxide solution were pipetted into a series of test tubes provided with stoppers and a glass tube serving as a condenser. The tubes were simultaneously immersed in a boiling water bath. At an appointed time, one of the tubes was removed from the water bath, rapidly cooled, and the hydrogen peroxide titrated with potassium permanganate.

Fig. 1 shows the results we obtained in this manner with a peroxide solution stabilized with calcium phosphate. We





used 0.495 per cent H_2O_2, one per cent disodium phosphate duohydrate, 200 p.p.m. calcium chloride, and then used caustic soda to obtain the various pH values shown. We see that the peroxide concentration decreases in this case approximately as a linear function of the time. We don't know that there is any particular significance to the linearity. For instance, there may be a change in pH during the decomposition and this would have an effect on the rate of decomposition. It was then decided that by taking the per cent loss found ten minutes after the solution temperature reaches 100°C., we would obtain a fair indication of the stability characteristics of the solution. This figure we call the "per cent loss in 10 minutes."

In Fig. 2 the "per cent loss in 10 minutes" is traced as a function of pH of the solution for four different formulations. The solutions were made up as follows:

(1) 0.50% H_2O_2
1.00% Disodium phosphate

(2) 0.495% H_2O_2
1.00% Disodium phosphate
200 p.p.m. calcium chloride

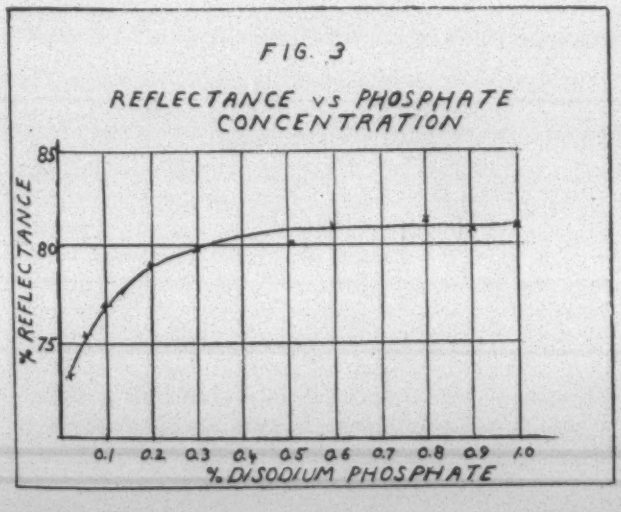
(3) 0.505% H_2O_2
0.80% tetrasodium pyrophosphate

(4) 0.50% H_2O_2
0.80% tetrasodium pyrophosphate
200 p.p.m. calcium chloride

When we have sodium phosphate in solution with hydrogen peroxide the loss is quite high at pH 8 and above pH 9 the peroxide becomes extremely unstable. If now we add 200 p.p.m. calcium chloride as in solution No. 2 the peroxide is very stable at pH and the stability decreases only slowly with rising pH, it being still quite good at pH 10.5. At higher pH the peroxide becomes rapidly more unstable. So we see the great difference in stability produced by a small addition of a calcium salt. The third curve in the graph illustrates the effect obtained when using tetrasodium pyrophosphate. The stability of the solution decreases gradually as the pH rises from 8 to 9 and more rapidly above pH 9. The addition of 200 p.p.m. calcium chloride is of little or no significant value in improving the stability of the pyrophosphate solution.

We wish to add that salts of other alkaline metals, such as, magnesium, barium and strontium behave in a similar manner. Calcium and magnesium being naturally present in the cotton fabrics and in the water, we find no particular advantage in using either barium or strontium.

FIG. 3



There have been indications that calcium is more effective than magnesium in our non-silicate solution, but that is of little practical importance as both are always present.

It is interesting to note a certain similarity in the behavior of orthophosphates and silicates in alkaline peroxide solutions. Both appear to require the presence of earth metal salts with which they form insoluble salts. These in turn serve as the stabilizers. Such is not the case with pyrophosphate. There, calcium, magnesium, etc., are not required to produce stabilization nor will they improve to any appreciable degree what stabilization is attained with pyrophosphate.

We have presented the problem to be solved and then traced step by step the development of the basis for a formulation of a non-silicate stabilizer suitable for continuous steam bleaching. Now we must reduce our experimental findings to practical plant usage.

Practical Application

We have shown that calcium phosphate is the desired ingredient for the necessary stabilization. Since this material is practically insoluble in water we thought it would be most expedient to form the calcium phosphate within the saturator and on the cloth. This is done by introducing a buffered solution of disodium phosphate to the saturator. Borax is the common buffering agent although others could be used. We have indicated that the cotton and water will usually supply sufficient calcium for our needs. However, to be on the safe side, particularly if the cloth has been soured and/or if water of zero hardness is used, we have been continuously adding from a separate source a small quantity of calcium chloride solution to the saturator.

We want to point out that a calcium chloride solution is corrosive to stainless steel and other metals. It is best to use ceramic, glass, hard rubber or plastic equipment for storing and delivering the solution to the saturator.

The concentration of the disodium phosphate in the saturator can vary over a fairly wide range. Fig. 3 will illustrate this fact.

A series of solutions were made up each containing 0.5 per cent borax, 0.02 per cent calcium chloride. 0.5 per cent H_2O_2. Each solution had a different quality of disodium phosphate added and then the pH of each was adjusted to 9.6 with sodium hydroxide. Desized cloth samples were impregnated with each solution and then heated for 1½ hours. Reflectance readings taken on each sample after rinsing and drying were plotted against the disodium phosphate concentration. These reflectance readings admittedly are low as to be expected on cloth which had only been desized. However, we feel it served the purpose of our experiment. You see that a minimum in the neighborhood of 0.3 per cent disodium phosphate is required and there seems to be little advantage indicated if more than one per cent is used. Since the disodium phosphate is the primary alkali source, there are indications that under certain conditions it may be necessary to change these limits.

The pH of the saturator solution is most important and highly critical. Actually, the pH of the cloth from beginning to the end of the steaming time is probably the critical factor in obtaining a satisfactory bleach result. Of course, this condition will be controlled by the pH of the saturator solution and its make-up. Unfortunately, we cannot recommend any general pH formula for it must be adjusted to suit conditions at each plant. Some of the factors

to be considered in setting a definite pH range for a specific system are, for instance, type of material, treatment prior to bleaching, alkali carryover, temperature in J boxes, end-use, etc.

The non-silicate system for continuous bleaching has been in use for over a year on bleaching ranges handling lightweight, colored yarn fabrics. Whereas with the conventional silicate formula the frequency of abrasion marks and even broken yarns due to scale build up made it necessary to interrupt production every few days for cleaning purposes, the ranges are now completely scale free. For this plant it meant a big increase in production, extra labor could be eliminated, and there was a very noticeable reduction in seconds and rejected work. Periodic inspection of the J boxes revealed no scale formation whatsoever and they noticed a higher polish on the stainless steel than was ever attained before. In addition, they have noticed that the colored yarn fabrics tend to bleed less. However, we wish to state with emphasis that we are not claiming that the non-silicate formulation will either stop the bleeding of colored yarns completely or allow you to run colors which previously you would not have dared to bleach on a continuous range.

For those interested in continuously bleaching knit fabrics, we can say that laboratory experiments have given very promising results. Full scale trials will be made shortly. As you can fully realize, this being a relatively new development we have still to explore its possibilities in procedures other than continuous bleaching. There are indications that we will be able to expand this method to uses such as package bleaching. In recent months thousands of yards of cotton cloth earmarked for dyeing have been bleached with this formulation. The goods have been dyed both in batch and continuously with various types of dyestuffs. Dye results have been reported as being highly satisfactory. One very large finishing plant reported dye results superior to any work done previous to the adoption of the non-silicate formulation. The complete success of these extensive trials is ultimate proof that the calcium phosphate precipitate while being essential for stabilization, does not create the dye troubles which result from the formation of calcium or magnesium silicates.

In Table I we show a compilation of the results of various standard tests run on samples chosen at random during demonstration runs of the silicate-free process. In all of these demonstrations we made no changes in the peroxide concentration normally used by the mill. Please be sure that we have no intention of implying here that any specific test or group of tests will predict your dye results.

TABLE I
CLOTH ANALYSIS

Cloth Data	% *REF.*	% *EXT.*	% *TNC.*	*A*	*F*
1.58 yd. Twill	78.5	0.35	0.59	1.0	6.2
1.67 yd. Twill	76.2	0.25	0.47	1.5	6.5
2.00 yd. Poplin	76.6	0.30	0.50	1.1	5.6
3.13 yd. 109-58 B.C.—G. Mer.	89.5	0.28	0.35	3.0	7.6
3.55 yd. 136-60 B.C.	87.3	0.28	0.33	2.0	7.6
3.70 yd. 100-58 B.C.	88.4	0.25	0.47	2.0	6.8
4.00 yd. 80-80	86.3	0.42	0.55	2.1	7.5
4.00 yd. 100-60 G. Mer.	89.6	0.40	0.56	3.0	8.0
4.00 yd. 100-60	90.2	0.11	0.60	3.5	7.4

The per cent reflectance (% Ref.) is an average of six readings per sample taken with a Gardner Multipurpose Reflectometer using the blue filter. The per cent extractable matter (% Ext.) and the per cent total non-cellulose (% TNC) were determined using the A.S.T.M. test D 629-46 T. The absorbency (A) was determined by dropping water on the taut surface of the cloth from a dropper suspended three-eighths of an inch above the cloth. The time required for the specular reflectance to disappear is measured in seconds. The results shown are averages of six tests per sample. The fluidity values (F) were determined using a modification of the Clibbens-Geake cuprammonium procedure.

The question of cost is bound to be raised. It would indeed be most fortunate and quite unusual if we were able to replace an extremely low priced chemical with one of equal cost. You surely have realized by now that we were not that fortunate. We estimated that the chemical cost of the non-silicate formulation would be from 60 cents to one dollar per thousand pounds of cloth higher than a conventional silicate formula. Several plants which have used the system reached a chemical cost which would lead us to believe we could lower the 60 cents per 1,000 pounds minimum increase. If a bleachery has need for a non-silicate formula, it is quite likely that the advantages they will gain will more than offset the increased chemical cost.

Summing up this presentation, we can say that the textile industry now has available a silicate-free hydrogen peroxide formulation for use in continuous bleaching. We are not proposing that all bleaching ranges should be converted to silicate-free formula, but we do think the process will be of great interest to bleacheries which have been troubled with scale build-up on their equipment. This scale, which has been identified as being primarily silicates of calcium and magnesium, causes abrasion and even will break yarns. Furthermore, certain complex silicates are difficult to remove from cloth causing stains and generally poor dye results. We have discussed the stabilization of alkaline hydrogen peroxide solutions and traced step by step the development of a formulation found suitable for replacing sodium silicate solutions when needed. This system has been thoroughly tried out in at least a half dozen plants and the results have indicated the following advantages: (1) recovery of production previously lost while cleaning scale from equipment; (2) reduction of seconds and rejects due to damage resulting from scale; (3) elimination of dye troubles caused by silicate compounds left in cloth.

Piedmont A.A.T.C.C. To Meet Feb. 4

The Piedmont Section of the American Association of Textile Chemists & Colorists will hold its Winter meeting Feb. 4 at the Poinsett Hotel, Greenville, S. C. The event will get under way at 10 a.m. with a research committee meeting. Officers luncheon will be held at 12:30 p.m., followed by the technical session at 2 p.m. Appearing as speakers at the session will be George F. Jones, supervisor for textiles and special products research laboratory, Imperial Paper & Color Corp., Glen Falls, N. Y., who will speak on "Pigments for Textiles," and Charles R. Williams, plastics division, Monsanto Chemical Co., Springfield, Mass., whose topic will be "A Study of 'Wash and Wear' Cottons." Henry A. Rutherford, head of the department of textile chemistry at North Carolina State College, Raleigh, will be guest speaker at the banquet at 6:30 p.m.

How To Operate Dryers Efficiently

By LEO WALTER, Consulting Engineer (Part One)

The plant engineer or master mechanic is not supposed to be a wet processing expert, but he is frequently called on to find out "what's wrong with our dryers?" In this first section Mr. Walter deals with fundamentals of drying; next month he will take up more specific details.

OF all the items of textile machinery, the drying equipment is usually the one whose efficiency can be most easily marred by poor operation. Any type of textile dryer can be operated so that it has good output, but it is usually unknown at which price output is being achieved. In order to operate a dryer efficiently, i.e. at a minimum cost for heat, power and labor, certain basic rules must be applied, irrespective of application, make and installation. Textile dryers should receive constant attention and frequent testing to achieve the best possible operational performance under existing working conditions. In order to run a dryer economically such optimum conditions can only be established by practical testing. Measuring and automatically controlling instruments should be used to maintain best performance. Any alteration in working conditions, such as drying of new material, speeding up of output etc., require new tests and new rulings for practical operation.

When a new dryer is installed in a mill, tests are usually carried out by the supplier. Suitable instructions are given on how to operate the new unit efficiently under the expected working conditions. Many older dryers are, however, in operation in mills where these instructions have been forgotten or where working conditions have been changed during the years. The quality, thickness and moisture content of the material to be dried may have changed. Instead of using the dryer for one type of material for which it was installed, different substances are being dried, or the original method of drying has been changed repeatedly over the years. The worst circumstances arise when dryers are forced to give maximum output, without regard to economy, and sometimes to the disadvantage of the materials to be dried.

What are the factors which influence dryer efficiency and thus cost of drying? The following may be mentioned: Overloading, underloading, irregular feed, idle machine time, varying heat supply input, wrong fan speed, bad contact pressure on rollers or cans, bad or dirty heating surfaces, uneven heat distribution on cans, wrong conveyor speed, and, last but not least, lack of proper attention on part of operators. To these factors may be added physical and chemical variables in the heat flow process, such as varying fiber sizes, fluctuating moisture content of ingoing material, and many other processing factors.

The fundamental fact is that an efficient dryer, whether hot air or contact type, has only been designed (a) for maximum output for a single material, or (b) for a small group of similar materials. There is no universal dryer design available for textile materials, and one of the main causes for inefficiency is the indiscriminate changeover from one textile material to another. For example, to switch over from a very moist thick fiber to a less humid thinner material without careful adjustments of rate, of heat input, of air volume and speed in hot air dryers, or of contact pressure and speed of rotation of drying cylinders or cans, invites waste.

The writer has many instances in his notebook where, by comparing figures from various tests the steam consumption per dried unit (weight) may vary from one to three for similar machines, but under different efficiency conditions. Dryers which have been bought as second-hand machinery, and have been installed to deal with a completely different material than that for which they have been originally intended are among the worst. It is here where most fuel, heat, power and labor can be wasted. Obviously in such instances replacement by a modern dryer, designed for the actual working conditions, will always be a sound capital investment.

The main question is, however, does plant management know how big the waste is? Does it care to investigate? To realize that the main purpose of an efficient dryer is to evaporate the maximum amount of moisture within the shortest time at minimum cost is half the battle won. Let us now deal with some fundamentals.

Basic Facts

The basic considerations for dryer efficiency—simple as they are—require some explanation, as users of dryers in industry are not always fully conversant with the underlying principles. Efficiency of drying can be considered in terms of the output of correctly dried material and the cost of drying per unit weight of material. Thermal efficiency of drying can be defined as the relation between output of dried material and heat required for evaporation of moisture, i.e. heat input. By bringing the energy introduced into a dryer in the form of heat, power, etc., into comparison with the results achieved, several similar dryers can be analyzed.

Where an air dryer is operated at excessive fan speed, power is obviously wasted to no useful purpose. Where on the other hand, the humid air is not carried away quickly enough, through the exhaust fan being inadequate, time is obviously wasted. Should it be necessary to operate a cylinder dryer at lower speed than designed—due to lack of efficient steam trapping and air venting of the steam-

heated cylinders—the thermal dryer efficiency and output will be unnecessarily low. The most efficient dryer will only work far below its rated efficiency if working conditions are unfavorable. Change of manufacturing methods, installation of an intermittent heavy steam consumer in an adjacent department fed from the same steam supply mains as the dryer, may cause periodic steam starvation with consequent erratic dryer output. What should be realized is that a drying apparatus possesses not only internal characteristics, inherent to the dryer design, but also external characteristics, depending on working conditions, and that these may well exert the greater influence (Fig. 1).

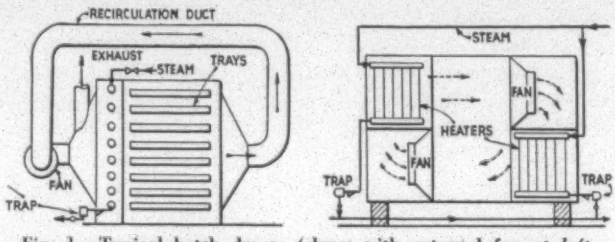


Fig. 1—Typical batch dryers (dryer with external fan at *left*, chamber dryer *at right*).

Factors For Dryer Efficiency

Ordinarily, drying refers to removal of water from a solid material when the moisture content is relatively small. This content may be higher in semi-solid pasty substances, and much more for liquid suspensions which require evaporation by means of heat for their separation. Cylinder drying machines use a suction effect for absorption of water by means of the surrounding air of the vapor from the cylinder surfaces. Hot-air dryers use evaporation, preferably preceded by mechanical squeezing out of moisture in a pre-drying operation. Open-air drying is sometimes carried out.

When dealing with dryer efficiency and the means of improving such efficiency in existing industrial dryers, it will be assumed that steam is the heating medium. The usual way of expressing drying cost in general is to compare output per unit cost with some maximum figure. The user of a dryer is naturally mainly concerned with the cost of drying; this, however, gives no real indication of the relative efficiency of a machine, i.e., the ratio of input of energy. The costing figure "pound of steam per pound of dried product" is somewhat vague as to the relative thermal efficiency of a machine. A better yardstick would be a figure giving "pound of steam per pound of moisture evaporated," because it takes the amount of moisture content into consideration. This steam consumption figure per pound of evaporated moisture can be calculated from the weight of dried product per hour from the difference of percentage moisture before and after drying, and from the average steam consumption in pounds per hour. If A = per cent water before drying of moisture, B = per cent after drying of moisture, C = the weight of dried material in pounds per hour, and D = steam in pounds per hour, the weight of "bone dry" material will be:

$$E = \frac{100 - B}{100} \times C$$

The weight of moisture evaporated per hour will be in pounds:

$$F = \frac{A}{(100 - A)} \times E$$

and steam consumption is therefore $S = \frac{D}{F}$ in pounds of steam per pound moisture evaporated. The figure S, based on steam consumption, is also a much better figure than the usually quoted figure of "pound of coal burnt per pound of dry work output." This latter figure does not take into account the calorific value of the coal. The ideal figure would be "B Th.U per pound output of dry work."

Another point to be considered for dryer efficiency is loading. Partial loading of any type of dryer, whether batch or continuous, brings down thermal efficiency, as do frequent stoppages of conveyor dryers. Although it is obvious that a dryer has been designed for full load, irregular loading is often encountered in practice, with the result that overloaded dryers require longer time for the same output with resulting larger heat losses, whereas underloaded dryers waste heat by using more hot air or steam than necessary.

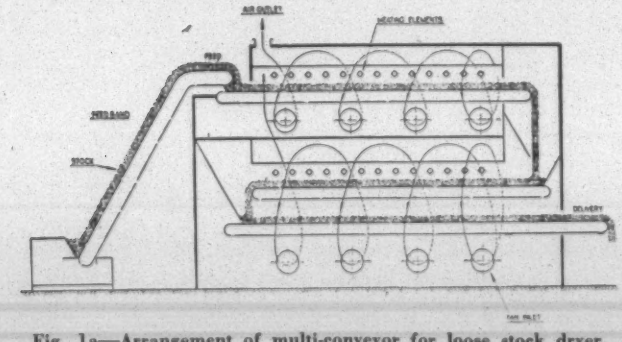


Fig. 1a—Arrangement of multi-conveyor for loose stock dryer.

Operation Of Drying Equipment

The practical operation of a dryer should closely follow the intentions of the designer of the plant, provided the apparatus is being used for the purpose and under conditions for which it has been ordered. This is, however, not always the case, e.g., where a drying apparatus has been "home-made" of bought second-hand, or has been haphazardly altered.

It also sometimes happens that a dryer has been installed for a certain product, but production has changed over to another product, followed by a switching over of the dryer to new working conditions, without much investigation as to whether the apparatus is really suitable for the new duty.

It is not always easy to decide which dryer type should replace an obsolete piece of equipment. Dryer design is influenced rather by the price of the complete plant than by the required rate of drying, and also by the total time taken to bring the moisture content of the material down. Low first costs have usually to be paid for by higher running costs, and a high rate of drying might sometimes endanger the quality and finish of the product. As a tentative ruling, long fiber drying processes may be best performed in cabinet dryers, although the same product could be dried in a slowly moving conveyor dryer, as often performed now that batch drying is being replaced more and more by

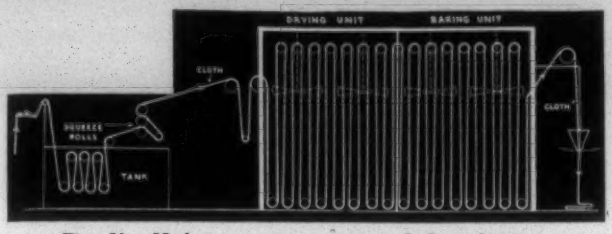


Fig. 1b—Modern two-stage proctor cloth carbonizer.

continuous drying apparatus. Shorter drying times lend themselves readily to the use of conveyor dryers, cylinder dryers, or can dryers (Fig. 1b).

Although it is obvious that hot air drying requires that fresh warmed air particles are continuously brought into contact with the goods, this point is sometimes neglected in drying rooms, or drying stoves, where air circulation is imperfect, forming "dead corners" with more or less stale air. It is not surprising that uneven drying results, and prolonged drying is needed to "give the wetter particles a chance to dry." This should not be tolerated, and where bad distribution of hot air is obviously the cause of bad output, the only remedy is to improve this by means of hot air nozzles, or by baffling, or by installing an additional fan or heating surface. Uneven temperature distribution may also cause discoloration of finish of the goods or a lowering of quality of some material, which in the end may reduce the quality of the whole batch with consequent losses in sales price. Where it is desired to dry at top efficiency, ways and means can nearly always be found to improve dryer operation.

Calculations for any type of dryer involve, first an estimation of time of drying necessary for evaporating the surface—and fiber-bound-moisture, and consideration of the process factors which influence the rate of initial drying; and, secondly, heat calculations and estimation of the air volume required to carry away the water vapor found. The correct air velocity over the surface of the material and direction of flow have to be decided by the designer of the plant. *(To be concluded).*

Promotions, Resignations, Honors, Transfers, Appointments, Elections, Civic and Associational Activities

PERSONAL NEWS

H. M. Jackson

H. M. Jackson has been named sales representative for Whitinsville (Mass.) Spinning Ring Co. He will cover the company's Alabama, Georgia and Tennessee territory, making his headquarters in Jefferson, Ga. Mr. Jackson was formerly purchasing agent for The Jefferson (Ga.) Mills Inc. Prior to that he was superintendent of the mill. His appointment was effective Jan. 1.

H. C. Goins of Jacksonville, Ala., has been named superintendent of Roseboro (N. C.) Spinning Mills, a division of Little Cotton Mfg. Co., Wadesboro, N. C.

Raymond H. Whitney has been named Southeastern district manager for the Morse Chain Co. of Ithaca, N. Y. Mr. Whitney, who will make his headquarters in Charlotte, N. C., will handle the company's complete line of power transmission products.

C. Allen Gove, formerly controller of Kendall Cotton Mills, a division of The Kendall Co., has assumed the position of plant manager of the company's new finishing plant in Bethune, S. C. The construction of the new $8 million plant is about complete and equipment is being installed. The operation is expected to begin in the Spring. Mr. Gove spent five years with the company's finishing division in New England prior to being transferred to Charlotte, N. C., in 1952. The Goves will make their home in Camden, S. C. . . . Julian R. Black, a North Carolinian, will succeed Mr. Gove as controller of the cotton mills division. A graduate of Duke University and a certified public accountant in North Carolina, Mr. Black is a native Charlottean. He joined The Kendall Co. in 1947, and was assigned to the cotton mills division at Charlotte until 1951 when he was transferred to the company's finishing division in New England.

Marvin R. Cornell has been appointed head of the industrial engineering division of Amerotron Corp. Mr. Cornell was formerly with American Thread Co. in a similar capacity and, prior to that, was with Textron Inc. in New England.

Alfred Holt Grant, former area manager for Amerotron Corp., has been appointed chief development engineer of the Commerce and Industry Division of the North Carolina Board of Conservation and Development. William P. Saunders, former president of Robbins Mills, is director of the department.

A. Griffin Ashcroft has resigned as vice-president and director of research at Alexander Smith Inc. as a result of the merger of the firm with Mohawk Carpet Co. and the transfer of the research and development department to Amsterdam, N. Y. Edmund A. Leonard has been named acting director of the department. Mr. Ashcroft, who had been with the firm 23 years, had served as president of the Textile Research Institute and received the Harold de Witt Smith medal of the American Society for Testing Materials.

Walter M. Mitchell of Atlanta, Ga., vice-president and director of the Draper Corp., has been named a director of the Federal Reserve Bank of Atlanta for a three-year term.

Hugh M. Comer, chairman of the board of Avondale Mills, Sylacauga, Ala., has been nominated for the Birmingham, Ala., "Man of the Year" award to be made next month.

Cecil J. Squires

Cecil J. Squires has resigned as assistant superintendent of the Fieldcrest Mills Inc. bedspread plant at Leaksville, N. C., to become plant manager for Northampton Textile Co., Mount Holly, N. J. At the New Jersey operation he replaces Howard Nock, who is retiring. Mr. Squires had been associated with Fieldcrest Mills for approximately 15 years and is a 1938 graduate of North Carolina State College. Last June he

PERSONAL NEWS

was elected a member of the board of governors of the Southern Textile Association; his new duties, assumed Jan. 3, have necessitated his resignation from the S.T.A. directorate.

John K. Cochran, vice-president of Duplan Corp. and general manager of operations, has resigned. Duplan announced last August that it would discontinue weaving operations at its plants in Grottoes, Va., and Burnsville, N. C: Following that announcement, Lyman B. Frieze resigned as president and was succeeded by George Friedlander, vice-president. In September, Walter Neale, treasurer, resigned and was succeeded by John E. Clark. Mr. Cochran made his headquarters at Charlotte, N. C.

C. Glenn White of Kings Mountain, N. C., has been named to a supervisory position with Linn Mills Co. and Corriher Mills Co. of Landis, N. C. Mr. White formerly was superintendent of the Phenix Plant of Burlington Industries at Kings Mountain. Prior to that he had spent some eight years as superintendent of Alma Mills, Gaffney, S. C. More recently he has been a sales representative for Redman Card Clothing Co. of Andover, Mass.

Rupert L. Murphy, traffic manager and attorney for the Georgia-Alabama Textile Traffic Association and a representative of the American Cotton Manufacturers Institute, has been named a member of the Interstate Commerce Commission by President Eisenhower. Mr. Murphy will fill out the term of Hugh W. Cross, and will serve until Dec. 31, 1957.

W. Sheridan Huss has been named president of Acme Steel Products Division, Acme Steel Co., Chicago, Ill. Mr. Huss joined Acme in 1919. In 1952 he was named manager of the company's Southern sales area. He served in that capacity until January 1955 when he became vice-president and general manager of the Acme Steel Products Division.

Joseph F. Chalmers, general superintendent, and J. B. Harris Jr., assistant vice-president, have been named vice-presidents of Greenwood (S. C.) Mills. Cecil O. Browning, head of the cost and quality and standards department, has been elected an

Joseph F. Chalmers

J. B. Harris Jr.

assistant vice-president. Horace W. Brinson was named to the board of directors of Greenwood Mills, and C. D. Blalock, controller, was elected a member of the board of directors of Greenwood Mills Inc., the firm's New York selling house. J. C. Self Jr. is president of the company, holding the position which his late father held for so many years. J. B. Harris Sr., for many years vice-president under the senior Mr.

COTTON UTILIZATION PANEL—Members of the Cotton Utilization Panel confer with cotton scientists of the Southern Utilization Research Branch of the Agricultural Research Service, U.S.D.A. *Seated, left to right,* are: Dr. Leonard Smith, director of utilization research, National Cotton Council of America; Dr. C. M. Conrad, head, cotton fiber section, S.U.R.B.; John C. Elting, director of research, Kendall Mills Research Laboratories; W. J. Martin, cotton utilization specialist, Federal Extension Service; Dr. Walter M. Scott, assistant director of utilization research, A.R.S.; R. F. Lederer, National Cotton Council; Dr. C. H. Fisher, chief of Southern Utilization Research Branch; R. E. Stevenson, research co-ordinator, A.R.S.; and T. G. Hawley, director of research, United Merchants Laboratories. *Standing,* C. F. Goldthwait, head, cotton chemical processing section, S.U.R.B.; Dr. H. D. Barker, head, section of cotton and other fiber crops, Field Crops Research Branch; Richard Hall, agricultural economist, Agricultural Marketing Service; T. H. Hopper, head, analytical, physical-chemical and physics section, S.U.R.B.; E. A. Gastrock, head, engineering and development section, S.U.R.B.; Dr. Hugh M. Brown, dean, School of Textiles, Clemson College; T. L. W. Bailey, Foreign Agricultural Service; Mason DuPre', Jr., special assistant to the chief, S.U.R.B.; George S. Buck Jr., technical service director, National Cotton Council; R. J. Cheatham, head, cotton mechanical processing section, S.U.R.B.; and Lindsay Dexter, assistant treasurer, Pepperell Mfg. Co. The group met at the Southern Laboratory in New Orleans, La., to study and evaluate various research projects that might be undertaken to improve cotton's economic position.

Self, is chairman of the board. L. B. Adams is treasurer. Messrs. Self, Harris, Adams, Harris Jr., Brinson and John B. Sloan now make up the company's board of directors.

Fred L. Wilson, general superintendent of Cannon Mills Co., Kannapolis, N. C., has been named general manager to succeed the late A. L. Brown. Mr. Wilson, a graduate of N. C. State College, has been with the firm since 1931. . . . Hester Warren has been promoted from superintendent of carding and spinning to general superintendent of carding, spinning, shop and maintenance. He is a native of Kernersville, N. C., and has been with Cannon since he was graduated from N. C. State College in 1937. . . . Elmer L. Spence has been promoted from superintendent of weaving to general superintendent of weaving and finishing.

Thomas D. Russell, president of The Russell Mfg. Co. of Alexander City, Ala., has been elected a director of the National Association of Manufacturers. Mr. Russell is past president of the Alabama Cotton Manufacturers Association and a past president and director of the Alabama State Chamber of Commerce.

C. W. Rowland has been named plant superintendent in charge of all yarn manufacturing at Durham (N. C.) Spinning Mills, a division of Durham Hosiery Mills. He succeeds Paul A. Whetstone who resigned to accept a position in the nylon division of Allied Chemical & Dye Co. at Hopewell, Va. Mr. Rowland comes to Durham from Sterling Cotton Mills Inc. at Franklinton, N. C. . . . Paul L. Swink is now general overseer of carding and spinning in the spun nylon and cotton yarn departments of Durham Spinning. He succeeds J. T. Campbell who has resigned due to ill health. . . . Olif Paschall has been appointed general overseer of the spun Orlon yarn department and the testing laboratory. He succeeds H. R. Higgins who has retired.

Bishop F. Smith Jr.

Bishop F. Smith Jr. has been appointed assistant sales manager of the chemical division of F. H. Ross & Co., Charlotte, N. C. Mr. Smith was formerly district manager for the Westvaco Chlor-Alkali Division of Food Machinery & Chemical Corp. A graduate of Georgia Institute of Technology, with a bachelor of science degree in chemical engineering, he will make his headquarters in Charlotte and cover all the Southeast for the company.

The board of directors of Fulton Bag & Cotton Mills, Atlanta, Ga., has named a new executive committee composed of directors who are not engaged in day-to-day management of the company. R. O. Arnold, chairman of the board of regents of the University System of Georgia, has been named chairman of the group. Other members are James D. Robinson, board chairman of First National Bank of Atlanta, and Herbert R. Elsas, Atlanta attorney. The

committee will supervise and implement a program drawn up by a firm of management consultants. The program includes a plan of divisional administration and more effective operations.

D. F. Westmoreland of Charlotte, N. C., Southern factory service manager for Saco-Lowell Shops, has resigned his position to join Textile Machinery Exchange Inc., a new Charlotte firm which has applied for a North Carolina charter to deal in machinery. Mr. Westmoreland had been with Saco-Lowell 28 years. President and treasurer of Textile Machinery Exchange is C. H. Marcotte. The firm has its offices at 1010 Woodward Avenue.

Aubrey Mauney, secretary and treasurer of Kings Mountain (N. C.) Mfg. Co., has been named acting executive secretary of the Brotherhood of the United Lutheran Church and will devote part-time attention to the position until April when a full-time secretary, already appointed, is able to report.


J. Wesley Henderson

J. Wesley Henderson, sales engineer with the Pneumafil Corp., Charlotte, N. C., has been named to receive a "Distinguished Sales Award" from the Charlotte Sales Executives Club for winning his company's recent Pneumastop sales contest. A trophy will be presented Mr. Henderson at the club's annual award banquet, Jan. 27.

R. I. Dalton Jr., Southern agent for Whitin Machine Works, has been elected president of the Greater Charlotte (N. C.) Textile Club. He succeeds Charles H. Conner Jr. of Anheuser-Busch Inc. Other officers named are J. W. (Woody) Hubbard, Saco-Lowell Shops, first vice-president; and Don Hamilton, Cotton Mill Machinery Co., second vice-president. Re-elected secretary-treasurer was Demont Roseman Jr., *Daily News Record*.

Sidney W. Tingen, assistant treasurer and secretary of West Boylston Mfg. Co. of Ala. at Birmingham, has been named to succeed the late G. Arthur Cook as treasurer and general manager. . . . Dwight L. Epperson, superintendent, has been named vice-president in charge of manufacturing; Dan B. Williams has been appointed assistant secretary, and Alfred V. Sims is the new assistant treasurer.

Carl R. Harris, vice-president of Erwin Mills Inc., Durham, N. C., and Harold Mercer, general manager of Firestone Textiles, Gastonia, N. C., have been named to the advisory council of the school of engineering at North Carolina State College, Raleigh. They are among five new members who will serve three-year terms.

Johnson Craig has been named supervisor of mill village beautification and forestry for Abney Mills, Greenwood, S. C. Mr. Craig, soil conservation supervisor for the company's Greenwood area since 1938, succeeds the late Wiley W. Hendrix as forestry supervisor. He is a graduate of Clemson College where he majored in animal husbandry and agronomy.

Spencer Love, chairman of the board of Burlington Industries Inc., has been appointed North Carolina state chairman for Brotherhood Week, Feb. 19-26. Brotherhood Week is sponsored by the National Conference of Christians and Jews. . . . Robert Greene, superintendent of Burlington's Newton, N. C., rayon plant, has been transferred to the manufacturing staff of the spun weaving division, of which the Newton plant is a unit. He will make his headquarters in Greensboro, N. C. Replacing him as superintendent at Newton is Brady Holland, who comes to Newton from Greensboro where he has held a similar position on the division manager's staff. . . . William A. Julian, director of cotton purchasing for the company, has returned to his post following a four-month leave of absence. Mr. Julian suffered a heart attack early last September and spent most of his leave in Florida recuperating. . . . Frank L. Asbury Jr. has been placed in charge of the company's waste sales department, with headquarters in Greensboro. The waste sales department handles all yarn and fiber waste for Burlington plants, with the exception of Ely & Walker, Peerless Woolen and the woolen and worsted operations of Pacific Mills. Mr. Asbury has been with Burlington since 1948. . . . R. P. Arnold of Woodruff, S. C., former group manager of Burlington plants at Johnson City and Bristol, Tenn., has been named manager of the company's new plant in Venezuela. The plant, at Valencia, will process man-made and natural fibers.

William B. Ross has been named a sales representative for The Fairbanks Co. in the company's Alabama-Tennessee territory. Mr. Ross, a graduate of the University of Wyoming, comes to Fairbanks with a background of machinery sales to dealer organizations. He will handle the complete Fairbanks line.

George A. Rawcliffe has been appointed controller of the Dixon Corp., Bristol, R. I., supplier of Dixon drafting components for the textile industry. In his post, a newly created one, Mr. Rawcliffe will serve as chief accounting and statistical officer. He was formerly with Arnold, Hoffman & Co. Inc.; Clearwater (S. C.) Mfg. Co.; Rockland Finishing Co., West Haverstraw, N. Y.; and Swansea (Mass.) Print Works.

M. Lowenstein & Sons Inc. has announced the following personnel changes in connection with the company's acquisition of five units of Pacific Mills from Burlington Industries: Roy Coffee has been transferred to Anderson, S. C., from Wamsutta Mills at New Bedford, Mass., as executive assistant to the vice-president. He will serve in a top liaison level with Wamsutta and Pacific. . . . Henry Buchanan has been promoted to a like position with the Orr Mills of Anderson; Covington (Ga.) Mills; Huntsville (Ala.) Mfg. Co.; Limestone Mfg. Co., Gaffney, S. C.; Aleo Mfg. Co., Rockingham, N. C.; and Spofford Mills,

Wilmington, N. C. . . . William H. Grier, manager and vice-president of Rock Hill (S. C.) Printing & Finishing Co., has been named executive vice-president for the finishing plants at Rock Hill and Lyman, S. C. . . . T. G. Roche has been promoted to general manager of the cotton mills at Lyman, and will continue in his present position as general manager of the two Limestone plants at Gaffney. . . . W. F. Howard continues as superintendent of the cotton mills at Lyman. . . . Tom Lawson, general superintendent of the four Pacific plants at Columbia, S. C., has been promoted to general manager of the Columbia group. . . . Jack Crosland continues as manager of the print works at Lyman.

M. E. McManus

Marshall E. McManus, a veteran of 29 years in the textile industry, has been appointed field circulation representative for TEXTILE BULLETIN. Mr. McManus began his textile career in 1926 with St. Pauls (N. C.) Cotton Mills. From 1929 to 1948 he was associated with Johnston Mfg. Co. in Charlotte, N. C. In 1948, he joined Burlington Industries where he served as superintendent of its Oxford, N. C., spun rayon plant until 1953. Since 1953 he has been in business for himself. For the past six months he has been a distributor for Tropical Paint & Oil Co. of Cleveland, Ohio. A native of Albemarle, N. C., Mr. McManus will make his headquarters in Charlotte.

Samuel F. Adams has been named Southern sales manager for American Paper Tube Co. Mr. Adams has represented the company in the field for nine years and has been Southern sales representative for the past year, with headquarters in the Calhoun Towers, Greenville, S. C.

John W. Lipscomb has been named sales manager of the waste, salvage and machinery sales department of Cone Mills Corp. Mr. Lipscomb, who came to Cone Mills in 1946, has been for the past five years assistant waste salvage and machinery sales agent. Eugene Hood who headed that department was retired in December. The department handles sales of all cotton and synthetics wastes machinery and salvage items for Cone Mills. It also handles specified machinery purchases for the company and the transfer of machinery and salvage items to and from the various Cone plants.

H. M. Bailey Jr. has resigned as sales manager of Hartford Rayon Co., a division of Bigelow-Sanford Carpet Co. Inc. After an extended leave of absence, granted by the company, it is expected Mr. Bailey will continue his association with Hartford in the capacity of consultant to R. B. Freeman, vice-president for products. Southern sales activities for the company will continue in the hands of T. L. Leslie Jr.

Raymond A. All has been appointed assistant to William E. Clark, vice-president and general manager of the textile division, United States Rubber Co. In his new as-

signment, Mr. All, who has been manager of marketing research and analysis for the division since 1953, will assume broader management responsibilities in long range planning and effective utilization of productive facilities. He will continue to have a staff responsibility for marketing research and analysis. Mr. All was graduated from Clemson College in 1934 as a bachelor of science in textiles and attended the graduate school of Rutgers University in 1953 and 1954 in sales management and marketing. He joined the rubber company in 1937 at its Hogansville, Ga., textile plant and was later responsible for setting up labor standards at its Winnsboro, S. C., mills. In 1945 he became manager of industrial relations and labor standards for the textile division.

Rupert Riley

Rupert Riley has joined the sales division of Pneumafil Corp., Charlotte, N. C., as product specialist handling the company's new Lint Free Creel. A 1942 graduate of North Carolina State College School of Textiles, Mr. Riley has ten years spinning experience at Fieldcrest Mills, and in his new capacity will serve Pneumafil's customers on special creel problems.

M. H. P. Morand has been advanced to the post of manager of coatings sales for The Dow Chemical Co. He succeeds Floyd J. Gunn who has become manager of Dow's Los Angeles, Cal., office. Mr. Morand moved up after serving since 1953 as assistant to the manager of coatings sales. In his new capacity he will be responsible for marketing Dow coatings in the textile and other fields. His headquarters will be in Midland, Mich. .

Don W. Lyon has been elevated to general sales manager of the textile division of L.O.F. Glass Fibers Co., Toledo, Ohio. He succeeds C. F. Hegg, who recently was named to head a new automotive sales division. Mr. Lyon will supervise sales of the company's glass textile yarns and roving. He was previously manager of textile sales for L.O.F. Glass Fibers Co. and earlier had held the same position with the Fiber Glass Division and Libbey-Owens-Ford Glass Co. before the latter division merged with Glass Fibers Inc. to form the new company.

Five appointments in the research and development department of The Chemstrand Corp. have been announced. Daniel F. Crean is located in the Acrilan dyeing research group of the dyeing research section. Prior to joining Chemstrand, he attended Lowell (Mass.) Technological Institute where he graduated with a B. S. degree. A native of Stoughton, Mass., Mr. Crean is a member of the American Association of Textile Chemists & Colorists. . . . Dimitri D. Dellis is located in the nylon dyeing research group of the dyeing research section. He worked with the following firms prior to joining Chemstrand: Chrope Dye Co., Athens, Greece; Rayon Mfg. Co., Salonika, Greece; and Georgia Institute of Technology, Atlanta. A native of Salonika, Greece, Mr. Dellis attended the University of Salonika where he received a diploma in chemistry and Georgia Institute of Technology where he received his M. S. degree. . . . Hulett L. King is located in the Acrilan dyeing application group of the application section. Prior to joining Chemstrand, he was associated with Excelsior Mills, Union, S. C., for seven years and with Ciba Company Inc., New York City. A native of Guntersville, Ala., Mr. King graduated from Alabama Polytechnic Institute with a B. S. degree. He holds membership in the American Association of Textile Chemists & Colorists. . . . Laurent C. Renaud is located in the Acrilan dyeing research group of the dyeing research section. Prior to joining Chemstrand, Mr. Renaud studied at the Rhode Island School of Design where he graduated with a B. S. degree. He is a native of Woonsocket, R. I. . . . Richard C. Sharpe is located in the Acrilan dyeing application group of the application section. A native of Burlington, N. C., Mr. Sharpe formerly was associated with Burlington Industries at Greensboro and Burlington in the dyeing and finishing plants and laboratories.

Thomas F. Connell has been named manager of the spun yarn plant of Celanese Corp. of America at Burlington, N. C. He succeeds F. Murray Davidson who has been named manager of the customer service department, textile division, located in Charlotte, N. C. Mr. Connell joined Celanese in 1934 at its Cumberland, Md., plant. He worked, successively, in the warp knit, cellulose acetate and accounting departments of that plant until January 1942, when he was transferred to the Burlington plant as assistant office manager. From 1953, until taking over his new assignment, he was assistant plant manager under Mr. Davidson.

R. F. Lederer

Robert F. Lederer has been appointed assistant to J. Banks Young, Washington, D. C., representative of the National Cotton Council. Mr. Lederer has been a member of the council staff since June 1953, when he became a member of the technical department of the utilization research division. A native of Philadelphia, Pa., he attended the Philadelphia Textile Institute. Mr. Lederer has also served as secretary of the utilization research panel and the cotton research proposals group of the Department of Agriculture's Cotton and Cottonseed Research Advisory Committee.

G. William Byers has been promoted to head of the weaving division at the textile research department of the American Viscose Corp. in Marcus Hook, Pa. Formerly an assistant in the weaving division, Mr. Byers replaces William P. Crawley, who has resigned. A graduate of Philadelphia (Pa.) Textile Institute and an instructor in worsted yarn manufacture at that school, Mr. Byers joined American Viscose in 1941 as assistant foreman in the textile research department's woolen division. In 1954 he was transferred to the weaving division.

OBITUARIES

George L. Baxter, 59, a director and sales manager of Bradford Dyeing Association, New York City, died last month. Widely known in the finishing industry, Mr. Baxter had been with Bradford since 1929. At the time of his death he was vice-president of the American Association of Textile Chemists & Colorists for the Central Atlantic Region. He had long been active with the A.A.T.C.C., almost since it was founded in 1921. Surviving are his widow, two sons and two sisters.

Bryan Martin Blackburn, 72, vice-president and treasurer of Arnco Mills, Newnan, Ga., died last month in Newnan. Mr. Blackburn was also treasurer of R. D. Cole Mfg. Co., board chairman of Manufacturers Bank and a director of Grantville (Ga.) Mills. Surviving are his widow, two daughters and a son.

Edwin H. Bost, 71, who retired last July as manager of Erwin Mills Inc., Mills Nos. 2 and 5, Erwin, N. C., died Jan. 10. At the time of his retirement, Mr. Bost had been manager of operations at Erwin since 1924. At the age of 28, he became a laborer on construction at the Erwin plant at Cooleemee, N. C., and then later became an employee of the company. He later was briefly associated with Mooresville (N. C.) Mills; Bemis Bro. Bag Co., Jackson, Tenn.; Spring Mills, Lancaster, S. C.; and Brandcord Mills, Concord, N. C. Survivors include his widow, five sons and a brother.

A. Luther Brown, vice-president and general manager of Cannon Mills Co., Kannapolis, N. C., drowned Dec. 19 when his car plunged into Town Park Lake in Kannapolis. Mr. Brown was one of the first employees of J. C. Cannon, founder of Cannon Mills. He joined the company 57 years ago as a cotton opener. He is survived by two brothers and two sisters.

Edward F. Cook, 76, co-owner of Cook-Taylor Co. Inc., Charlotte, N. C., died Jan. 12 at Charlotte. Mr. Cook, born in Rettick, England, was with American Thread Co., Fall River, Mass., for 38 years before moving to Charlotte. He invented, patented and sold a banding device for spinning frames. Surviving are his widow, a daughter, a sister and two brothers.

Lotan Alpha Corriher, 84, president and manager of Corriher Mills Co., Landis, N. C., died recently. Widely known as a textile leader and philanthropist, Mr. Corriher had for 20 years been mayor of Landis. Survivors include his widow, two sons, three brothers and four sisters.

J. Frank Dings, 57, general manager of the National Wool Marketing Corp., died Dec. 28 in Braintree, Mass. Mr. Dings was well known in the wool trade, having started in the business in 1917 with the old firm of Crimmins, Peirce & Co. In 1922, he

joined Draper & Co., remaining there until 1933 when the National Wool Marketing Corp. emerged from that firm. He was associated with National until 1947 when he joined the top making firm of James B. Draper & Sons as a director and wool buyer. He returned to National in 1952 as general manager. Survivors include his widow and two sons.

Prof. Thomas R. Hart, 65, director of instruction and former head of the department of weaving and design in the School of Textiles, North Carolina State College, Raleigh, died Jan. 10 in Raleigh. A native of Monroe, N. C., Professor Hart joined the State College faculty in October 1919. He had also worked in cotton mills in Monroe and Burlington, N. C.; in the experimental department of the Barber-Colman Co., Rockford, Ill.; and as traveling erector for the Draper Corp., Hopedale, Mass. He was the author of several books on textiles, including a history of the N. C. School of Textiles published in 1951. He is survived by his widow, a son, a sister and three brothers.

Frank Ix Sr., 88, founder and president of Frank Ix and Sons Inc., New York City, died Dec. 29 at his home in Englewood, N. J. Mr. Ix was born in Germany and came to this country in 1892. In 1918, he founded his own company, which now has plants at Cornelius and Lexington, N. C.; Charlottesville, Va.; Union City, N. J.; New York, N. Y.; and New Holland, Pa. Surviving are four sons.

Lonnie Neil Mills, 65, general manager, secretary and treasurer of Paola Cotton Mills Inc., Statesville, N. C., died recently. Survivors include his widow, a son and two sisters.

Joseph B. Morgan Jr., 67, textile executive of Nashville, Tenn., died recently in Nashville. Mr. Morgan at the age of 13 joined Morgan & Hamilton Co., founded by his father in 1883. He worked in every department and had risen to the presidency when the firm was sold in 1928 to Werthan Bag Co. He was manager of the Memphis, Tenn., plant of Chase Bag Co. from 1928 to 1937 when he returned to Nashville to join the sales staff of Werthan Bag Co. He had been retired since 1947. His widow, a brother and a sister survive.

Edgar Lee Ramsey, 53, vice-president of A. B. Carter Inc., Gastonia, N. C., died recently. Mr. Ramsey had been with Carter 31 years. He is survived by his mother, his wife and a son.

James L. Steen, 46, purchasing agent for Hartsville (S. C.) Print & Dye Works, died recently in Charleston, S. C. Mr. Steen had been with the company 26 years. His widow, two children and a brother survive.

Clifford Marvyn Stodghill Sr., 66, president of Stodghill & Co., Atlanta, Ga., textile chemical firm, died Jan. 12 in Atlanta. Mr. Stodghill founded Stodghill about 23 years ago. He was a graduate of Auburn and was an assistant professor there for a time. Surviving are his widow, two daughters and a son, Clifford M. Jr.

MILL NEWS

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS. AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

LAUREL, MISS.—Laurel Textiles Inc. has been purchased by Dan T. Manget Jr. of New Orleans, La. Mr. Manget, who said he bought the property as an individual and not as a representative of Manget Industries Inc., said he would use some of the property for the storage of from 15,000 to 20,000 bales of raw cotton for the Cotton Stabilization Service, an agency of Commodity Credit Corp. The new owner plans to sell the plant's machinery, the plant medical clinic, 64 unoccupied building lots and employee dwellings. Equipment in the plant included 21,688 spindles and 753 looms.

CONCORD, N. C.—Linn Mills Co., producer of combed yarns, has re-opened here on a one-shift basis. The plant had been idle since last September. Robert Hamilton of Darlington, S. C., is the firm's new superintendent.

KINGS MOUNTAIN, N. C.—Horvath Inc. has completed its acquisition of the operating facilities of Neisler Mills Inc. William F. McKee of Chicago, Ill., has been named controller for Horvath. Along with two former Neisler executives, Howard B. Jackson and Paul Mauney, Mr. McKee will manage the six plants until a general manager can be named. The Neisler brothers will continue with the new organization in an advisory capacity. The group of mills will be known as the Neisler Division of Massachusetts Mohair Plush Co. Inc., a Lowell, Mass., textile operation employing 800 persons. No further changes in Neisler personnel or operations are expected.

LAURENS, S. C.—Deering, Milliken & Co. has placed an order for 40,000 spindles of Model G-4 high draft cotton spinning frames with American Rieter Co. Inc. of Arlington, N. J., American sales subsidiary of Joh. Jacob Rieter & Co. Ltd., Winterthur, Switzerland. The $1\frac{1}{2}$ million order is slated for Deering, Milliken's Watts Plant here, according to a company spokesman. Deliveries are expected to begin in June.

BRIDGEPORT, PA.—James Lees & Sons Co. Inc., here, has announced that it will spend some $6 million for expansion this year, with a third of the total devoted to building up its tufted carpet facilities. The company operates a plant in Glasgow, Va.

PEPPERELL, ALA.—Pepperell Mfg. Co. has recently completed an expansion of its finishing plant here. New equipment installed includes a 60-inch continuous dyeing range, a new 60-inch mercerizer and new bleaching and preparatory equipment to supplement the new dyeing range. The project marks the second major addition to the plant in the past two years. Early in 1954, a huge, continuous 100-inch dyeing range was installed. Installation of the new equipment increases the capacity of the finishing plant by one-third.

NEWBERRY, S. C.—An expansion program to cost approximately $1 million has been announced by Newberry Mills Inc. The program will include a $185,000 addition to the mill plant and machinery which, if purchased new, would cost around $1 million. Some used machinery will probably be bought, according to a mill official. Machinery to be added will include 366 looms and 20,000 spindles. Construction on the addition will start next month, and the new unit is expected to be in operation by mid-October. The expansion will require the hiring of 140 additional workers.

GREENSBORO, N. C.—Burlington Industries Inc. has announced that it is establishing a new plant at Valencia, Venezuela. The new company will be known as Branger Burlington Textiles, C. A., and is a partnership venture between Burlington and C. A. Sucessora De Ernesto L. Branger, Venezuela cotton manufacturer. Plans call for upward of 10,000 spindles and the unit will be completely integrated from spinning through the dyeing and finishing of woven goods. Production is expected to begin in the Spring. It is the seventh foreign plant for Burlington, the others being in Mexico, Colombia and Canada.

NEW YORK, N. Y.—M. Lowenstein & Sons has announced that the recently-acquired Pacific Mills plants in Columbia, S. C., will be known as Pacific-Columbia Mills Inc. The name of the cotton finishing division of Pacific at Lyman, S. C., has been officially changed to the Lyman Printing & Finishing Co. Inc. Pacific Mills has retained its name for use in conjunction with the manufacture and merchandising of worsteds, woolens, blends and synthetic fabrics.

TENNILLE, GA.—Linway Mfg. Co., newly-organized textile firm, has taken over operation of Washington Mfg. Co. here, producer of army duck and hopsacking. Linway was formed in Atlanta last November to effect the purchase of Palmetto (Ga.) Cotton Mills. R. W. Linscott Jr., treasurer of William L. Barrell Co., New York, heads Linway.

MORGANTON, N. C.—Crown Plush Mills of New Jersey has purchased a plant here which for the past 15 months has been in operation under the name of Jacquard Mills Co. The property was owned by Ridwill Realty Co. Crown plans to install new machinery under a program of expansion.

RANLO, N. C.—Rex Mills Inc. has awarded contracts for the construction of an addition to its synthetics fiber operation here. The addition will contain some 35,000 square feet of floor space, to be used in the spinning of synthetic fibers. Fiske Carter Co. of Greenville, S. C., was awarded the general contract. Completion of the project is expected in about three months.

JACKSON, MISS.—New South Textile Mills has been chartered here, capitalized at $2,500,000. Incorporators are Joe L. Moore, president of Joe L. Moore Co., real estate and investors, and Arthur C. Howard Jr., both of Gadsden, Ala. The Moore firm recently purchased five Mississippi mills owned by the estate of the late R. D. Sanders. The mills, situated in Starkville, West Point, Winona, Magnolia and Kosciusko, were acquired for about $1,500,000. Only the Starkville unit is in operation, but Mr. Moore has said that he will reactivate the other four by Spring and that stock sales would begin about March 1. He reported plans to offer $5,700,000 stock, at $3 a share, before the reactivation gets under way. An estimated 2,600 workers will be employed in all five mills when production begins, it is said.

WASHINGTON, N. C.—National Spinning Co. Inc., here, has placed an order for four new Saco-Lowell SS-4G spinning frames. The new spinning frames will be installed within the next two months.

ROCK HILL, S. C.—J. P. Stevens & Co. Inc. has announced plans to spend $1.3 million on modernization at its Aragon Baldwin Plant and Industrial Plant here. Included will be the installation of 21,000 spindles with long draft, large package spinning at Aragon Baldwin at a cost of about $1 million. New dyeing and finishing equipment at Industrial will represent an expenditure of some $300,000.

GASTONIA, N. C.—Pardale Mills Inc., manufacturer of combed cotton yarns here, has placed an order with Saco-Lowell Shops for Model DS-2 3-over-4 drawing frames in order to modernize its operations and improve the quality of production. Delivery on the frames is expected soon.

ROANOKE RAPIDS, N. C.—J. P. Stevens & Co. Inc. has purchased the three plants here of the Simmons Co. The plants are Patterson Mills Co., producing sheeting and dobby greige goods; Roanoke Mills Co., producing shirting flannels, sport denims, tickings and upholstery fabrics; and Rosemary Mfg. Co., producing cotton damask, napkins, upholstery and tickings. Some 132,768 spindles and 2,703 looms are involved in the transaction. Simmons is primarily a manufacturer of furniture and bedding. Stevens also acquired Simmons' Simtex Mills division, New York textile sales organization.

RANLO, N. C.—The A. M. Smyre Mfg. Co. has placed an order with Saco-Lowell Shops for 24 additional Gwaltney spinning frames to supplement the Gwaltney unit which has now been in production for almost three years. The addition of the new frames will give the company approximately 36,000 spindles.

WEST POINT, GA.—West Point Mfg. Co. and its president, J. L. Lanier, were honored recently by the Newcomin Society at a dinner meeting in Birmingham, Ala. Mr. Lanier outlined the history of the firm from its charter in 1880 to present day operations.

GREENVILLE, S. C.—White Horse Mill, a division of Maverick Mills of Boston, Mass., is currently expanding its plant fa-

cilities. An increase in spinning capacity has been going on over a long period, and a number of looms have also been added.

SLATER, S. C.—The J. P. Stevens & Co. plant, here, is engaged in a modernization project expected to cost some $300,000. An addition of some 43,000 square feet is under construction and will be used for the rearrangement of existing equipment to overcome a crowded manufacturing and storage condition.

WAYNESBORO, VA.—The Du Pont Co. has announced that a project is under study for the building here of a large new plant for the manufacture of Orlon acrylic fiber. If authorized the plant would be in addition to the existing extensive facilities here for making acetate yarns. The proposed plant would produce 40 million pounds of Orlon annually. The company emphasized that construction funds have not yet been authorized and that it would be several months before the results of the studies were known. At present all Orlon is produced commercially at the company's plant at Camden, S. C.

GADSDEN, ALA.—Standard-Coosa-Thatcher Co. is permanently closing its Sauquoit Plant here. The third shift was discontinued Jan. 16 and remaining operations will be closed down gradually over the next several months. The plant, which employed about 310 in full production, represents about ten per cent of the firm's entire operation, and has been operated by S-C-T since April 1930.

ST. STEPHEN, S. C.—Construction on the Albany Felt Co. plant here is expected to be completed by the end of March, according to the Daniel Construction Co., general contractor. The single-story building will occupy approximately 100,000 square feet —4,000 square feet of which will be devoted to offices. The plant, said to be the first complete mill in the South for the manufacture of paper machine felts, will be equipped with large felt looms up to 600 inches wide, and 84-inch woolen cards.

ANDERSON, S. C.—The public relations department of Abney Mills and Erwin Mills has announced two projects designed to promote greater public understanding of the textile industry. An invitational tour program has been launched, whereby each week four or five business and professional leaders will be taken on a tour at each plant. Abney has adopted the program in the seven South Carolina communities where it has plants, and Erwin in the five North Carolina communities where its plants are located. Another program adopted is the establishment of speakers bureaus in the various communities to furnish program speakers for civic clubs and other organizations. In other announcements, the public relations department, headed by Chauncey W. Lever, has announced that Renfrew Bleachery, a division of Abney at Travelers Rest, S. C., has been awarded a special plaque award by the Greenville County United Fund. Abney's Southside Plant here has accumulated 1,183,876 man hours without a lost-time accident. The man hour total covers 16 months.

A HANDBOOK OF TWISTING

By NEAL TRUSLOW, Superintendent of Product Development, United States Rubber Co., Winnsboro, S. C.

– Chapter Seven (Effect of Twist on Appearance) –

WHEN style goods such as clothing and house furnishings are being made, the twist that is used is frequently selected on the basis of esthetics. This is because twist can have a pronounced effect on the appearance of the goods and this effect is due to both the direction of twist and the level of twist.

Previous chapters have described the effect that twist has on the diameter of yarns. High twist produces a cylindrical yarn with a high density, while low twist gives a yarn that is bulky and tends to flatten out. When the high twist yarn is made into a fabric, the air spaces between the yarns are much larger than when a low twist yarn is used. Therefore, fabrics made with high twist yarns are more open and transparent with each yarn clearly defined. This effect is, of course, more noticeable for open weave fabrics and where this openness is wanted for coolness or novelty appearance, yarns with a firm twist are usually selected. Examples of this type of fabric are laces, nets, skip dents, batiste and tropical suitings. In contrast to these types, a low twist is used where good cover is wanted, such as for sweaters, upholstery and Winter suitings. In the suiting category are the flannel types which have a napped or brushed surface. In order to effectively raise the surface fibers by lifting them from the main yarn structure, it is necessary to spin these yarns with as low a twist as is practical.

The twist in the yarn will also affect the appearance of uniformity. The hard twisted yarns will generally accent the appearance of any thick and thin areas in the yarn. This is because, during most types of twisting processes, the twist tends to concentrate in the lighter areas since those areas offer less resistance to the bending forces imposed on the fibers. The amount of this concentration of twist is approximately proportional to the 0.8 power of the yarn size. In other words, if a long, uneven strand of fibers is twisted, the turns per inch varies as the unit weight raised to the 0.8 power. Unevenness in the distribution of the twist will also arise with any unevenness in the distribution of the bending modulus of the individual fibers. However, the twist multiple for any given number of turns will vary in proportion to the 0.5 power of the yarn size. Because of these effects in the various sections of an uneven yarn, we find a variation in the angle of twist or twist multiple. (Note that this is in contrast to some of the work that has been reported by Balls, where for fine cotton yarns, he found no variation in the angle of twist.) The spots where the angle of twist is highest are the spots where the yarn is most compact and therefore the diameter of the yarn changes, not only with the change in unit weight, but also with the unit density. The harder a yarn is twisted, the more uneven it appears to be because the yarn diameter is affected by both the weight variation and the density variation.

When the hard twisted yarns are made into a fabric, the uneven appearance becomes quite noticeable if compared to soft twisted yarns because the lack of flattening of the hard twisted yarns prevents a blending and crowding together of the individual threads. This effect is noted not only in flat fabrics like shirtings, but also in pile fabrics like loop pile rugs. It is used to advantage when a linen-like texture is desired. In cases where a hard but uniform appearance is needed such as for lace yarns and worsted suitings, this effect dictates the use of plied yarns.

Fabric shine or reflectance is defined as the coefficient of reflection of the material. If the fabric is considered a plane surface, the reflectance can be obtained by measuring the amount of light which is reflected from the surface at an angle equal to the incident light and then comparing this amount to the incident light. The more nearly the fabric surface behaves like a mirror, the higher a reflectance it has. In order to obtain this condition, the fabric must have a smooth and uniform surface. In conventional fabrics, it is not possible to reach this condition, and the nearest approach is with filament yarns with a zero twist put into a plain weave.

Luster in a fabric refers to the ratio between the light reflected in one direction and the light reflected in a direction 90° from the first. Thus, a fabric would have high luster if it reflects a large portion of the light in the warp direction and scatters a large portion of the light in the filling direction. It has been demonstrated by several workers that this condition is most nearly met when a large portion of the fibers on the fabric surface are all parallel. This in turn means that a fabric in a sateen weave made from low twist yarns should have high luster. The effect on luster, when the twist is varied in singles cotton yarns, is shown in Fig. 7-1. This figure shows how luster varies inversely to the twist multiple. It is for this reason as well as to aid the penetration of the chemicals, that low twists are usually specified for yarns which are to be mercerized.

In Fig. 7-1 the ply twist multiple was selected as equal to the single twist multiple because that is the condition which has been found to give the maximum luster. In

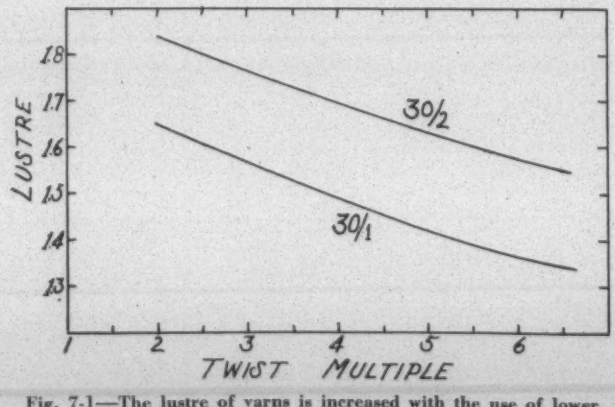


Fig. 7-1—The lustre of yarns is increased with the use of lower twists. The ply yarn has same twist multiple in the singles and the ply.

other words, for a ply yarn, the number of turns per inch in the ply should be equal to the number of turns per inch in the singles divided by the square root of the number of plies. When this amount of ply twist is used, the surface fibers will be parallel to the yarn axis and therefore maximum luster can be obtained. It is interesting to note that this same condition is usually required for maximum strength and yarn balance. When a yarn is made in a ply structure with a low twist and equal twist multiple in both the singles and the ply, a high reflectance is obtained from light that strikes the fabric in planes that are parallel to the plane of the yarns. Conversely, a low reflectance is obtained if light strikes in a plane perpendicular to these yarns. This condition produces the high luster. For this reason, certain fabrics like bridal satin, where luster is wanted, are made from this type of yarn.

When a fabric is wanted which has a low luster, it is desirable to use high twists in order to cause the light to be reflected from the fibers at a number of different angles. This is one of the techniques used to produce nylon or silk hosiery with a dull luster, in which case a twist multiple of 2.5 is used. Another application of this theory is in the production of suiting fabrics which will not acquire the "shine" that is sometimes associated with the seat of trousers made of blue serge. For suitings which will resist this tendency to acquire a shine, it is desirable to use yarns in which the ply twist is in the same direction as the singles twist. This is commonly called "twist on twist."

Attractive, but subtle, effects can frequently be obtained in fabrics by using yarns which vary in the direction or the amount of twist. These yarns will also vary in their light reflectance so that very delicate stripes and checks can be produced. This technique has been used to produce certain types of antique satins, Glen Urquart plaids and crepon fabrics.

Weave effects, such as twills, can be made more or less prominent by the proper selection of the twists that are used in the component yarns. This is accomplished by the effect that twist has on the embedding or nesting of one set of yarns in the orthogonal set of yarns. In order to obtain embedding, the twist must be in the correct direction and of the correct magnitude. With singles yarns, the twist must be of a medium to soft twist because the hard twist yarns are usually so compact and dense that very little embedding can take place. With ply yarns, a low twist is also needed for maximum embedding, but with hard twist ply yarns, the helical ridges that are on the surface of the yarns can embed to a certain degree.

The direction of the twist direction is usually expressed by "S" or "Z" symbols, but these symbols refer to the appearance of the upper surface of the yarn, and at the yarn intersections, we must consider the top surface of one yarn and the bottom surface of the other yarn. When this is done, it is seen that the bottom surface of a yarn has the fibers inclined in a direction opposite to that of the top. Effective bedding can only take place when the fibers on the bottom of one set of yarns are inclined in the same direction as the top of the other set of yarns. From this, it follows that for good embedding the direction of twist for both the warp and filling yarns must be the same. A high degree of embedding will produce a flat, even fabric with superior strength and less shrinkage. However, the embedding minimizes the appearance of the woven twill line which may be wanted, and when that is the determining factor, the twist

direction of the warp and filling should be opposite to each other with one being "Z" twisted and the other being "S" twisted.

It is known that many fabrics made from normal twist yarns, with both the warp and the filling twisted in the same direction, that a considerable amount of embedding occurs. This must mean that the surface fibers on the warp yarns are parallel to the surface fibers on the filling yarns where they cross. If the yarns cross at right angles, such as is usually assumed to be the case for woven fabrics, this means that the sum of helix angles of the warp and filling must equal 90°. However, with normal twists for straight yarns, the angles are less than this. Then how can the embedding be explained?

The answer lies in the distortion of the yarns which affects the helix angles. First of all, there is the distortion of the angles due to the flattening and the bending of the yarns. The flattening tends to decrease the helix angle at the cross-overs, but this is usually more than compensated for by the increase in the helix angle when the yarn is bent. Larger local helix angles occur at the innermost point of the bend, and smaller angles at the outermost point and this can easily be seen by bending a piece of heavy rope. A general expression for the local helix angle of the outside of a singles yarn which lies in a ply has been shown to be:

$$\tan a = \frac{aG \times \cos Q}{r \operatorname{cosec} Q - a \sin Q \cos T} \qquad (1)$$

where a is the radius of the singles yarn, r is the ply yarn helix radius, Q is the helix angle of the ply-yarn, T is the position angle of the fiber in the singles yarn, and G is the ratio of fiber turns about the singles-yarn axis to singles-yarn turns about the ply-yarn axis in a given length.

If a singles yarn is bent in a plane to form a torus, such as would be the case of a warp yarn bending over a filling yarn, and if the warp and filling yarn have the same diameter, the equation becomes much simplified so that

$$\tan a = G \qquad (2)$$

Previously we have shown that

$$G = \frac{2 \text{ pi T.M.}}{K} \qquad (3)$$

where K equals 28 when a cotton count T.M. is used.

Using this type of calculation, the following table has been prepared by Backer in which the helix angle of straight yarns is compared to woven yarns at different levels of twist:

		Surface Helix Angle	
Type Yarn	T.M.	Straight	Woven
Knitting	3.0	19°	34°
Filling	3.5	22°	38°
Warp	4.8	28°	47°

The actual values of the helix angles at the yarn cross-overs probably lies somewhere between these two extremes. It can be seen that this helps, but still does not completely explain embedding if the total angle of the warp and the filling must approach 90° if the yarns cross at right angles. The answer to this is that actually the yarns do not cross at right angles in many fabrics and this is the second factor which must be taken into account to explain the embedding of yarns. It has been found that different weaves will affect the yarn distortion in different ways, and this in turn will affect the embedding and fabric appearance.

If a right hand twill is designated as a "Z" twill, and a left hand twill is designated as an "S" twill, the effect on the twill line for a particular fabric is shown in the following table which demonstrates clearly that the weave can affect the embedding of the yarns. It should be noted that this twill line can be seen on satin weaves as well as twill weaves and that the direction of the twill line is not necessarily the same on the face of the fabric as it is on the back of the fabric.

Condition	Twill Direction	Warp Twist	Filling Twist	Effect in Cloth
1	Z	S	S	Warp Twill Sharp
2	S	Z	Z	Warp Twill Sharp
3	Z	Z	Z	Filling Twill Sharp
4	S	S	S	Filling Twill Sharp
5	Z	S	Z	Both Twills Sharp
6	Z	Z	S	Both Twills Indistinct
7	S	S	Z	Both Twills Indistinct
8	S	Z	S	Both Twills Sharp

The effect of this interaction is used in many fabrics. For instance flannels, where the twill line should be indistinct, should be made with conditions 6 or 7 above. Calvary twills should be made with conditions 1 or 2 above. Certain novelty fabrics where a sharp twill line is wanted on both the face and back of the fabric should be selected from conditions 5 and 8. It is also interesting to note that many fabric buyers insist on a "Z" twill when a distinct twill line is wanted. This insistence is often a subconscious realization on their part that a sharp twill fabric wears better if the twill is in the "Z" direction! At first thought, this sounds impossible, but investigation reveals the source of this difference: with normal yarns; the singles are spun in the "Z" direction, and the ply are twisted in the "S" direction. The ply yarns naturally wear better than the singles yarns and also produce the sharp "Z" twills in most fabrics.

The distortion of the yarns during weaving not only causes the yarns to cross at angles other than 90°, but also causes short length variations in the twist of the yarn so that the twist is either increased or decreased with consequent changes in embedding and yarn diameter. This is commonly seen in herringbone twills when a different colored warp and filling is used and then, on one side of the herringbone, the warp color predominates, while in the other side the filling color predominates. This distortion comes about from crowding of the various yarns so that they are forced out of their straight path.

General rules may be proposed for the effect that twill and satin weaves have on the twist-twill interaction. These general rules can be used to select weaves so that the twill line can be accented or minimized depending on which effect is desired. The interaction tends to increase or to decrease the local helix angles of the yarns due to the distortion of the yarns. In the case of balanced twills where lateral distortion of both yarn systems is caused by crowding of the transverse yarns, the local twist is reduced when the twist and twill directions are parallel. Conversely, when twist and twill lines cross, the local twist will be increased because of lateral displacement of the yarns in the fabric

For the case of unbalanced high cover weaves in which lateral distortion of the high cover yarns is caused by pressure of adjacent parallel yarns, the local twist will be increased when twist and twill directions are parallel. When twist and twill directions are crossed in these high cover weaves, the twist will be decreased.

Rayon And Acetate Yarn Shipments

Rayon and acetate yarn and staple producers in the U. S. in 1955 experienced their best year since the peak year of 1950, according to the *Textile Organon,* statistical bulletin of the Textile Economics Bureau Inc. Using the November rate of deliveries for the final month of the year (December figures are still incomplete) the *Organon* estimates that the yearly total of shipments would approximate 1,260,000,000 pounds compared to the record figure of 1,268,500,000 pounds shipped in 1950.

With imports added, the *Organon* points out that there is no doubt that 1955 will prove to be a year of record U. S. consumption of cellulosic fibers. Computing the total of domestic deliveries and imports for consumption, shipments to domestic mills last year should come to about 1,425,000,000 pounds and surpass by five per cent the previous peak of 1,351,400,000 pounds shipped in 1950.

In the first 11 months of 1955, the U. S. rayon and acetate industry shipped a total of 1,156,900,000 pounds, 16 per cent more than was shipped in the corresponding period of 1954. All cellulosic fibers shared in the increased activity through November except acetate staple+tow. Acetate staple+tow shipments totaled 57,000,000 pounds, nine per cent less than in the comparable period in 1954.

The strongest showing was made by rayon high tenacity yarns where total shipments rose to 397,000,000 pounds, 28 per cent above shipments in the comparable 11 months of 1954. Shipments of regular+intermediate rayon yarn in 1955 showed the second largest gain, reaching a total of 189,800,000 pounds or 17 per cent over the 11 months 1954 total. Acetate yarn shipments through November of 1955 amounted to 208,600,000 pounds, an increase of 13 per cent over the comparable 1954 period. Rayon staple+tow shipments aggregating 304,400,000 pounds were eight per cent over January-November shipments in 1954.

Production of cellulosic fibers in the first 11 months of 1955 totaled 1,147,800,000 pounds, one per cent less than shipments, and stock held by producers at the end of November 1955 thus declined to 78,600,000 pounds; this latest stock figure was 15 per cent lower than stocks held at the end of November 1954.

Production lagged behind shipments in the following categories: regular+intermediate tenacity rayon with production totaling 185,500,000 pounds or two per cent less than shipments; high tenacity rayon yarn with output amounting to 394,300,000 pounds or one per cent less than shipments; and acetate staple+tow with production totaling 52,500,000 pounds or eight per cent under shipments. In the other two categories, output exceeded shipments by a narrow margin. These were acetate filament yarn with output at 209,500,000 pounds, and rayon staple+tow with output at 306,000,000 pounds.

The *Organon* annual man-made fiber capacity study reveals that currently the industry has a capacity (not to be regarded as a statement or forecast of actual production) of 2,154;000,000 pounds per year. Fibers included in the study are rayon and acetate and all the non-cellulosic fibers including textile glass fiber. By next July the capacity is expected to reach 2,248,000,000 pounds and by March 1957, 2,338,000,000 pounds. By October 1957, the total man-made fiber capacity is expected to increase further to 2,382,000,000 pounds.

Rayon capacity at present, according to the *Organon,* is 1,117,000,000 pounds composed of 707,000,000 pounds

of yarn and 410,000,000 pounds of staple. By March 1957 total rayon capacity will be 1,233,000,000 pounds made up of 710,000,000 pounds of yarn and 523,000,000 pounds of staple. In November of 1954, total rayon yarn capacity stood at 1,118,000,000 pounds annually.

Analagously, acetate capacity is now 482,000,000 pounds yearly comprising 311,000,000 pounds of yarn and 171,000,000 pounds of staple. The *Organon* notes that no change is indicated in these figures over the next two years. In November of 1954, acetate capacity was 565,000,000 pounds.

Non-cellulosic and textile glass fiber capacity currently is 555,000,000 pounds annually and is comprised of 307,000,000 pounds of non-cellulosic yarn, 158,000,000 pounds of non-cellulosic staple and 90,000,000 pounds of textile glass fiber. By July 1956, total capacity of these fibers is expected to be 594,000,000 pounds and a further rise to 623,000,000 pounds is expected by March 1957. The total in October of 1957 is expected to be 667,000,000 pounds. The largest percentage gain is expected to be in non-cellulosic yarn.

High tenacity rayon yarn capacity currently is down by 18,000,000 pounds compared to a year ago, according to the *Organon*. Current annual capacity at 460,000,000 pounds is expected to decrease to 456,000,000 pounds by next July but by March 1957 a rise to 473,000,000 pounds is anticipated. The decline as compared to a year ago is due principally to the dismantling of a unit in one producer's plant. Also involved is an over-all slowing-up in the speed of spinning high tenacity yarn.

Regular+intermediate tenacity rayon yarn capacity now is shown at 247,000,000 pounds annually and further small decreases are projected to a total of 237,000,000 pounds by March 1957. Capacity compared to a year ago is 12,000,000 pounds less and is due mainly to abandonment of a producing unit at one producer's plant. Decreases are also due to a shortage of viscose solution supply, some of which is being used for the production of high tenacity viscose rayon at certain plant locations.

At present, operating capacity of the acetate yarn producing industry is placed at 311,000,000 pounds. This compares with 390,000,000 pounds a year ago. Acetate yarn capacity reduction has been caused first by slowing down of spinning speeds to improve quality and secondly by the increasing proportion of yarns produced in spun-dyed colors. In the latter operation, production is interrupted and lost in making the necessary spinning solution changeovers from one color to another.

Rayon staple capacity in November 1955 was 410,000,000 pounds. A year ago, the capacity was shown at 381,000,000 pounds and at that time it was expected to drop slightly to 380,000,000 pounds in July 1955, then increase to 432,000,000 pounds by March and October 1956. Incorporated in these figures from November 1954 to July 1955 were considerations of increases by certain producers as well as an offsetting decrease due to the closing of the Buffalo, N. Y. staple plant of E. I. du Pont de Nemours & Co., Inc., in the Spring of 1955. However, it has since been learned that some of the proposed increases reported earlier have been postponed beyond October 1957, the terminal date of the present capacity survey, thus the capacity projections for rayon staple a year ago are slightly higher than those now given for March and October 1957.

Acetate staple+tow capacity is given by the *Organon* at 171,000,000 pounds annually and represents a slight de-

crease from the 175,000,000-pound capacity of a year ago. Capacity of the textile glass fiber producing industry, now figured at 90,000,000 pounds per year, is expected to increase to 103,000,000 pounds by next July. Capacity of non-cellulosic man-made fibers, excluding textile glass fiber, is currently estimated at 465,000,000 pounds and is expected to rise to 491,000,000 pounds by July 1956, to 520,000,000 pounds in March 1957, and to 564,000,000 pounds by October 1957.

For filament yarn+monofilament products in the non-cellulosic fiber category, the present capacity is 307,000,000 pounds and it is expected to rise to 323,000,000 pounds in July of this year and to 380,000,000 pounds by October of 1957. Non-cellulosic staple+tow capacity is currently 158,000,000 pounds annually and is expected to increase to 168,000,000 pounds by July 1956, 174,000,000 pounds by March 1957 and 184,000,000 pounds by October 1957.

An analysis by the *Organon* of rayon and acetate yarn shipments by trades in the first nine months of 1955 reveals increased use of the cellulosic fibers in all major trades with the exception of the hosiery industry where consumption has steadily been declining. In the January-September period, hosiery knitters received 2,400,000 pounds or eight per cent less than shipments in the corresponding period of 1954. On the other hand, circular knitters received 19,600,000 pounds, an increase of 23 per cent; warp knitters 28,400,000 pounds, an increase of 43 per cent; broad weavers 245,300,000 pounds, an increase of 16 per cent; narrow weavers 11,400,000 pounds, an increase of 25 per cent; miscellaneous users 24,600,000 pounds, an increase of 38 per cent; tire manufacturers and related users 311,100,000 pounds, an increase of 29 per cent; and exports 9,400,000 pounds, an increase of 24 per cent.

A study of rayon and acetate staple shipments data reveals that in the first nine months of 1955 the general pattern shows three major trends, according to the *Organon*. Cotton spinners, while still taking the greatest poundage, are steadily declining in relative importance as an outlet for these products. Since 1952, cotton spinners' share of total staple shipments has fallen from 88 per cent to 74 per cent in 1954 and down further to 67 per cent in the January-September period of 1955. A similar trend is apparent in shipments to woolen and worsted spinners. Although never a large outlet, shipments to this trade dropped from 15,000,000 pounds in 1951 to 11,500,000 pounds in 1954, and in the first nine months of last year this market took only 7,400,000 pounds.

The third major trend is the increase of staple+tow shipments to the carpet and rug industry. Deliveries rose phenomenally from 6,200,000 pounds in 1952 to 57,500,000 pounds in 1954. In the January-September period of 1955, shipments were 59,900,000 pounds and data for the full year, when available, will probably show a 12 to 14-fold increase in the use of carpet rayon staple+tow since 1952.

Frank M. Carter of Textiles Inc. has been named president of the Chattanooga Yarn Association for 1956. He succeeds Freeman Harris, Standard-Coosa-Thatcher Co. Named vice-president was Hubert O. Fry of Central Franklin Process Co., who served as secretary the past year. Named secretary and treasurer, respectively, were Harvey W. Davenport and Robert D. McDonald, both of American & Efird Mills.

Ditton Re-Elected President of A.A.T.T.

Erb N. Ditton, until recently with Gotham Hosiery Co. Inc., has been re-elected president of the American Association for Textile Technology. All officers of the association, other than the treasurer, were also re-elected in the mail balloting. Fred H. Simmons of Manchester Worsted Mills was elected treasurer, succeeding Olen F. Marks, formerly of Industrial Rayon Corp., who has taken a post at the department of textile research, North Carolina State College, Raleigh.

Officers re-elected included Gerald K. Lake, Burlington Mills, first vice-president; Roger J. Gentilhomme of Cluett, Peabody & Co., second vice-president; and Miss Bernice S. Bronner, secretary. Governors elected for three years include Miss Elizabeth Ramsay, Good Housekeeping Institute; Edwin Eyerly, Cranston Print Works; and Bertrand W. Hayward, Philadelphia (Pa.) Textile Institute.

Area Meetings Launched By A.C.M.I.

The American Cotton Manufacturers Institute launched a series of area meetings of mill executives Jan. 16 in Macon, Ga. The meetings are designed to bring textile manufacturers of various localities together for informal discussions of matters vitally affecting the industry. Officials and staff members of A.C.M.I. are attending the meetings for evaluating the threat of skyrocketing imports from low-wage countries to the American industry and to talk over other problems confronting the mill men.

Attending part or all of the luncheon or dinner sessions to lead discussions are A. K. Winget of Albemarle, N. C., president of the A.C.M.I.; F. E. Grier of Greenwood, S. C., first vice-president; L. G. Hardman Jr. of Commerce, Ga., second vice-president; F. S. Love of Charlotte, N. C., secretary-treasurer; and John T. Wigington of Clemson, S. C., director of technical service. A mill man in each community is serving as host at each meeting.

This month meetings have been held in Macon, Columbus and Atlanta, Ga.; Birmingham, Ala.; and Chattanooga, Tenn. Next month meetings will be held as follows: Feb. 20—Augusta, Ga.; Feb. 21—Greenville, S. C.; Feb. 22—Spartanburg, S. C.; Feb. 23—Charlotte and Gastonia, N. C.; Feb. 24—Greensboro, N. C.

Cotton Spinner-Breeder Conference, March 7-8

Dates for the twelfth Cotton Spinner-Breeder Conference have been announced by George B. Walker, Stonewall, Miss., chairman of the Delta Council committee making plans for the industry-wide meeting. Delta Council, an area organization representing the Yazoo-Mississippi Delta, sponsors the meeting to provide a forum for the review of problems common to cotton breeders and manufacturers.

Mr. Walker said that the conference will be held March 7-8, in Charlotte, N. C. The hosts will be the American Cotton Manufacturers Institute and the Combed Yarn Spinners Association. Conference discussion will take place in the Hotel Charlotte.

The 1956 meeting, to be held in the territory which has the greatest concentration of cotton spinning and manufacturing plants in the world, will offer an excellent opportunity for cotton breeders, producers and ginners to discuss problems with textile leaders and see the progress being made in modern cotton mills. Mr. Walker said, in announcing the meeting, that top research and industry leaders will fill the program of the conference. Additional features of the program will include talks on developments in textile machinery, by representatives of the American Textile Machinery Association, and tours of spinning and manufacturing plants. The conference, which alternates between spinner and breeder territory, was last held in Greenville and Stoneville, Miss., in 1954. Cotton breeders of the Mississippi Delta were hosts to the conference, which attracted industry leaders from 20 states, the District of Columbia and four foreign countries.

Cotton Producer Mill Tour—Feb. 1-3

For the third consecutive year, the American Cotton Manufacturers Institute will sponsor a Cotton Producer Mill Tour to give a group of leading farmers from major cotton producing areas an on-the-spot view of the textile manufacturing industry in operation. The tour will be held Feb. 1-3 with headquarters at Columbus, Ga., center of a diversified textile region, according to A. K. Winget of Albemarle, N. C., A.C.M.I. president. The program will consist of visits to mills that process both cotton and synthetic fibers, as well as tours of one or more cotton gin machinery manufacturing firms. Visits will be made to plants in and around Columbus, as well as West Point and LaGrange, Ga.

The 1956 tour was arranged in response to requests by mill men and cotton producers alike as the result of successful tours previously held at Clemson, S. C., and at Charlotte, N. C. Mr. Winget pointed out the tour was part of the institute's continuing effort to enable cotton producers and manufacturers to discuss mutual problems with better understanding of each other's viewpoints. The visitors, including about 50 farm leaders and their wives, will see on the tour how their product is spun, woven and processed into consumer goods by the textile industry, number one customer of the American farmer.

Open House At N. C. State College

The Tompkins Textile Council of the North Carolina State College School of Textiles is sponsoring its third annual Open House Feb. 18. The event has a three-fold purpose. Primarily it presents an opportunity for any interested party to view the conversion of fiber into cloth. Secondly it presents mill men a cross-sectional view of the training a graduate of the School of Textiles receives during a four-year course of study. Thirdly, the event is designed also to acquaint the high school senior with the opportunities offered by the industry. The theme for the Open House is "Education in Action."

Jacoby Re-Elected A.A.T.C.C. President

Raymond W. Jacoby, consultant with Ciba Co. Inc., New York, has been re-elected president of the American Association of Textile Chemists & Colorists, to serve during the calendar year 1956. Two new vice-presidents were elected, and two other vice-presidents were re-elected to their posts. Ernest R. Kaswell, associate research director, Fabric Research Laboratories, was elected vice-president from the New England Region; and Frederick V. Traut, superintendent of processing, Globe Dye Works Co., Philadelphia, Pa., was elected vice-president from the Central Atlantic Region. Vice-presidents re-elected are Joseph H. Jones, superintendent, Phoenix Dye Works, Chicago,

Ill., from the Western Region; and Dr. Walter M. Scott, assistant director, Utilization Research, U. S. Department of Agriculture, Washington, D. C., from the Southern Region.

Mr. Traut succeeds the late George L. Baxter, who died Dec. 9 after a long illness. Mr. Kaswell succeeds George O. Linberg, vice-president of Synthron Inc., Ashton, R. I., who has served the past three years as vice-president from the New England Region, and was therefore ineligible for re-election. Mr. Jacoby will begin his second year as A.A.T.C.C. president soon by appointing members of standing and special committees of the A.A.T.C.C. Council.

A.A.T.C.C. Advisory Group Holds Meeting

The national research advisory committee of the American Association of Textile Chemists & Colorists, of which Dr. Eugene W. K. Schwarz is chairman, has already entertained and referred to the proper A.A.T.C.C. committees about 75 suggestions for future research activities, it was reported to the A.A.T.C.C. council, meeting recently in New York.

Leonard S. Little, chairman of the A.A.T.C.C. executive committee on research, reported to the council that Dr. Schwarz's committee has made considerable progress in "sparking the association's research program." The council also heard Albert E. Johnson of the National Institute of Drycleaning report that the A.A.T.C.C. corporate membership drive "is going along consistently well," and that indications for 1956 are very encouraging.

The Philadelphia Section was formally thanked for its outstanding work in conducting a highly successful 1955 convention for the association. Fred V. Traut of Globe Dye Works, the 1955 convention chairman, reported to the council final figures and details concerning the convention.

George O. Linberg of Synthron Inc., Ashton, R. I., association vice-president, reported for the Perkin Centennial Committee that titles of papers planned for the September 1956 celebration are already being received. Dr. Harley Y. Jennings, research director, Dan River Mills, Danville, Va., reported on the successful annual meeting of the Piedmont Section of A.A.T.C.C., held recently in Charlotte, N. C. Joseph H. Jones of Phoenix Dye Works, Chicago, Ill., vice-president of the association, reported that he had visited the Pacific Northwest and Pacific Southwest Sections, and had found these groups very healthy and working hard.

The executive committee on research and the technical committee on research heard reports from various committee heads on a wide range of research subjects. Committee personnel changes set for the new year were outlined by Charles Dorn, research director of J. C. Penney Co., chairman of the technical committee on research.

Cotton Yarn Backlogs Rise, Stocks Decline

Order backlogs of carded cotton sales yarn spinners showed a slight rise during November operations, the Textile Information Service reports. Unfilled orders on spinners' books on Dec. 3 amounted to 11.65 weeks' production and were 11.20 times the stocks on hand. This compares with order backlogs on Oct. 29 equal to 11.10 weeks' output and 9.42 times stocks. At the end of November last year, unfilled orders amounted to 8.31 weeks' production and were 4.98 times stocks on hand. Spinners' inventories, in-

cluding yarn made for future deliveries against unfilled orders, amounted to 1.04 weeks' production on Dec. 3. On Oct. 29, stocks equalled 1.18 weeks' output and at the end of November 1954, they were equal to 1.67 weeks' production. According to statistics of the Carded Yarn Association, covering reports from approximately 1.4 million member spindles, production in the week ended Dec. 3 consisted of 39.6 per cent knitting yarn, 33.2 per cent weaving yarn and 27.2 per cent all others. On Oct. 29, the percentages were 38.1, 34.5 and 27.4 respectively, and for the week ended Dec. 4, 1954, they were 33.4, 33.9 and 32.7.

A.C.M.I. Annual Convention April 5-7

Closing a year that saw several historic events affecting the textile industry, the annual convention of the American Cotton Manufacturers Institute will be held at the Hollywood Beach Hotel, Hollywood, Fla., April 5-7, A. K. Winget of Albemarle, N. C., A.C.M.I. president, has announced.

Manufacturers have watched imports of cotton cloth and apparel skyrocket in the past eight months, particularly those from Japan. The inflow was given a decided impetus by the action at Geneva in June drastically reducing tariff rates on imports from Japan. These rates became effective Sept. 10. In November the Japanese government halted new contracts for export of cotton goods to this country and proposed voluntary restrictive measures. On Dec. 28, A.C.M I. petitioned Secretary of Agriculture Benson for import quotas under Section 22 of the Agricultural Adjustment Act. These acts, as well as developments between now and convention time, will command major attention at the annual meeting. Consumer motivation also will be emphasized in parts of the three-day program.

Room reservation forms, transportation schedules and other data have been sent to A.C.M.I. member mills from Maine to Texas. Customarily the association allows textile mill members a 30-day period for making hotel reservations before it releases rooms to associate members in allied industries.

Details of the convention program will be announced soon, Mr. Winget said. A meeting of the institute's board of directors Wednesday afternoon, April 4, will precede the opening of the convention proper. A.C.M.I., representing about 85 per cent of the nation's cotton spinning and weaving industry, maintains headquarters in Charlotte, N. C., with other offices in Washington, New York and Clemson, S. C. In addition to Mr. Winget, officers are: F. E. Grier, Greenwood, S. C., first vice-president; L. G. Hardman Jr., Commerce, Ga., second vice-president; Robert C. Jackson, Washington, D. C., executive vice-president; and F. S. Love, Charlotte, secretary-treasurer.

Finished Goods Standards Approved

An official system for grading man-made fiber fabrics and blends with other fibers and silks, from the mill to the cutter and retailer, becomes available with the publication of "Standards for the Examination of Finished Goods" under the joint sponsorship of The National Federation of Textiles Inc. and The Textile Distributors Institute Inc., according to an announcement made by Andrew J. Sokol, president of the federation and Walter Ross, president of the institute. Publication of the standards by the two organiza-

tions representing mills and converters is described as a major achievement for the industry.

The standards were originally introduced by the institute in 1945 and submitted to and approved at that time by the garment manufacturers and their customers. The only change at this time is an additional provision to cover wide goods of over 50 inches.

Henceforth, these will be the official standards of the examination bureau of the federation whose facilities are available to the industry at large. The examiners who inspect fabric for the bureau are drawn from all phases of the textile and allied industries, including weaving mills, converters, dyers and cutters. They are chosen to serve only on cases involving specific types of goods with which they are familiar and experienced.

The institute's technical committee on standards for the examination of finished goods and the federation's committee on quality control worked together on perfecting them. Both Mr. Ross and Mr. Sokol expressed the appreciation of their respective organizations for the work which had been done by the two committees. As chairman of the T.D.I. committee, Max Meyre of William Skinner & Sons also served on the N.F.T. committee; and Sheldon Van Vliet of Greenwood Mills Inc., chairman of the N.F.T. committee, served as a member of the T.D.I. committee. Others serving on both committees were Harry Fleming, Burlington Industries Inc.; and Joseph Merton. Amerotron Corp. Serving on the N.F.T. committee, in addition to those mentioned, were John E. Bell, Stonecutter Mills Corp.; William C. Curtis, J. W. Valentine Co. Inc.; Richard Densberger, Frank Ix & Sons Inc.; George Dunn, J. P. Stevens & Co. Inc.; James T. Shotwell, Deering, Milliken & Co. Inc.; George Suhrie, Fox-Wells & Co. Inc.; and Charles Taubert, Klopman Mills Inc. Other members of the T.D.I. committee are Richard Roaman, Reliable Textiles; John Schoeberlein, J. W. Valentine Co. Inc.; Seymour Ulius, Belding-Hemingway Co. Inc,; and Frederick Wunderli, American Bleached Goods Co.

Blackman-Uhler Co. Awards $500 Scholarships

Three scholarships to outstanding students in textile chemistry have been awarded for 1955-56 as grants established by Blackman-Uhler Co. of Spartanburg, S. C., a division of the Andover Co. Two of the scholarships, valued at $500 each, have been established at Clemson College. Awards there were made to Kenneth Gary Jordan of Anderson, S. C., a junior, and to Samuel Gregg Thompson of Clemson, a first-year graduate student. The third scholarship, established at North Carolina State College, has been awarded to Victor H. Garrou of Valdese, N. C., a junior. Announcement of the scholarships and their recipients was made by P. C. Blackman Jr. of Blackman-Uhler Co.

Associate Memberships Available In C.M.A.G.

The Cotton Manufacturers Association of Georgia has announced that associate memberships are being made available to individuals of companies offering machinery, supplies and services to Georgia mills. The plan, to become effective March 31, 1956, is designed to foster closer relationships between the mills and their suppliers. Dues for associate membership have been established on an individual, per person basis, with no limitation on the

number of associate memberships per supplier company. The effective date of the plan will enable associate members to attend the association's 1956 convention, to be held at the Emerald Beach Hotel in Nassau, The Bahamas, April 25-27.

In regard to that convention, Frank L. Carter, secretary of the association, reports that transportation details to and from Nassau have been completed. Pan American Airways will operate special flights from Atlanta to Nassau on Tuesday and Wednesday, April 24-25, at 9:30 a.m. and 4 p.m., and from Nassau to Atlanta on Saturday and Sunday, April 28-29, at 8 a.m and 3 p.m.

A.C.M.I. President Views Coming Year

Textile industry prospects for 1956 look "promising" and the stage is set for an era of stable, profitable operation more in keeping with the rest of the national economy, provided that the unfair competition from low-wage imports can be controlled, reports A. K. Winget of Albemarle, N. C., president of the American Cotton Manufacturers Institute.

In a year-end statement, the top executive of the industry's central organization noted "encouraging signs" of expanding sales during the coming months. He pointed out that industry productive facilities are in better balance with demand for goods, following several years of adjustment. Therefore, the short range outlook appears favorable on the whole, Mr. Winget said, but the long-range situation is filled with uncertainty as a result of the threat posed by the rapidly increasing inflow of foreign-made cloth and apparel. Efforts now underway to bring foreign imports under control will, if successful, give impetus to additional industry growth; better domestic markets for cotton and other American-produced fibers and mill technological advances of benefit to the total consuming public, in Mr. Winget's opinion.

Full text of Mr. Winget's statement follows:

"As 1955 came to a close, the elements seemed to be present within the textile industry and the national economy for forward movement during the new year on a sound and stable basis, in terms of regained and steady employment, greater consumption of the farmer's product, a more reasonable return on investment and improved goods for consumers.

"The prospects ahead are promising on the whole. Provided the problems created by cheap-labor imports from abroad of fabrics and apparel can be resolved, the U. S. textile industry may well be ready for a long-awaited comeback, or ready to catch up with the nation's economic pace.

"The last few months have seen a definite step-up in the tempo of mill activity, a quickening of orders in most categories and a sounder ratio between mill stocks and unfilled orders. Distribution channels are normal. The price structure, while still lagging, is considered stronger than at this time a year ago, due to slightly improved mill margins.

"U. S. mills consume over 98 per cent American-grown cotton. The 1953-54 crop year saw a million bale drop in U. S. consumption but in the recent crop year that ended July 31, mills of this country consumed 8,835,000 bales, an increase of three per cent. This upward trend continued in the latter part of the calendar year 1955.

"Final production figures for the mill industry will show an increase in 1955 over 1954. Broad woven goods produc-

tion during the first three quarters, when projected to an annual basis, amounts to 9.86 billion yards compared with 1954 output of 9.76 billion yards.

"Stocks of cotton broad woven goods at the end of October were equivalent to a 3.0 weeks' supply as against a 3.2 weeks' supply in September. Backlog of unfilled orders at the close of September was equivalent to 11.08 weeks' production.

"There are encouraging signs that the industry has reached a point where, after a good deal of belt-tightening, sacrifice and liquidation, productive capacity seems in better balance than in many years with the potential demand of a growing population which has a relatively high purchasing power.

"This outlook is beclouded, however, by two inter-related factors—declining export sales and sensationally increased imports from overseas. The dropping off in exports occurs simultaneously with the sharp rise in imports. In 1951, U. S. mills produced 802 million yards of cotton cloth alone for foreign sale. By 1954 this had declined to 604 million yards. The 1955 total, projected on the basis of the first nine months, will be approximately 550 million, thus continuing the downtrend.

"Imports, meanwhile, shot up during 1955 beyond all expectation. Orders booked by American buyers in the single country of Japan during the one month of August hit 52 million yards, indicative of the sharp uptrend in imports of both cloth yardage and finished goods such as sheets, pillowcases and apparel.

"The price-and-volume impact of such importations, creating uncertainty in American markets, in price levels and in mill operation, is so severe as to make firm forward plans and progress impossible. Market requirements cannot be appraised with any degree of confidence when the volume and prices of foreign offerings are unpredictable.

"Steps now being taken by Japan on her own initiative to control textile shipments to the U. S. may open the way for remedial action which should more properly and more logically be instituted by our own government. Once textile import controls are established—equitable alike to foreign countries and the sub-divisions or segments of the American industry—the U. S. industry can plan ahead in the knowledge that there is a limit to which foreign goods entering this country can reach.

"Textile mills expended some $350 million in 1955 for new plant and equipment, a slight increase over 1954 but unquestionably an amount smaller than required for orderly rehabilitation or renewal of facilities, provided a reasonable solution of the import problem had given confidence for future physical expansion. Meanwhile, research, exploration of new products for new markets, and efforts to streamline sales and distribution methods have been pushed harder. Retail prices of textile and apparel goods continue to be relatively lower than those of any other major manufacturing industry.

"As the chief outlet, and a growing outlet, for American-grown cotton, the mill industry feels a great responsibility in contributing all its efforts toward keeping the cotton producing industry healthy. There is growing recognition of the fact that the cotton economy of the U. S. has no firm and enduring basis on which to stand other than the preservation and constant development of the American market, especially in view of the shrinking overseas outlets for U. S. raw cotton and cotton goods alike.

"During 1956, therefore, renewed efforts can be expected

of the textile industry to provide consumers a larger supply, greater variety, wider range and better average quality of goods than are attainable anywhere else in the world, at prices which relative to wages and operating costs, are the world's lowest."

Wool Bureau Sees Bright Outlook For 1956

Consumer expenditures on both men's and women's clothing are almost certain to be higher in 1955 than in any previous post-war year, The Wool Bureau reported in a year-end appraisal of the wool situation and outlook.

Estimates for the first three-quarters of the year show a measurable increase over the first three-quarters of 1954, and current trade reports indicate that the last quarter will exceed any earlier quarter, the bureau said.

Despite the record of higher spending this year, the bureau said, clothing expenditures continue to represent a lower—though stabilized—share of total consumer expenditures than in pre-war or early post-war years. For three-quarters of 1955, clothing expenditures increased four per cent over the corresponding 1954 period. Total consumer expenditures, however, increased seven per cent.

While consumption of raw apparel wool during the first ten months of 1955 recorded a gain of five per cent over the same 1954 period, the production of men's civilian wool fabrics scored a dramatic 25 per cent advance, and the production of women's fabrics rose 12 per cent.

Both in character and volume, the Wool Bureau study states, men's and women's clothing production during the first ten months of 1955 was favorable to wool fabric business. Increases of 17 per cent each over a year ago were registered in the mainstays of the men's wear wool business —regular-weight suits and coats. Summer-weight suit production declined slightly from 1954 because of apparent imbalance in total suit stocks, while the output of slacks rose 12 per cent, the bureau stated. Summer-weight wool suits decreased somewhat (eight per cent) in the competition with other fabrics (up two per cent), but slacks gained sharply (30 per cent) in the wool category, compared with the slight gain (five per cent) for other fabrics.

In women's clothing, gains of 15 per cent in suit production and 11 per cent in skirts were grounds for anticipating a strengthening of wool's position, the bureau said, although the absence of fiber details in the statistics precludes precise measurement of the gains. While the rates of increase in coat and dress production were not as great, they were up one per cent and four per cent in these respective categories as against 1954.

The shift toward woolen constructions continued in 1955, with wool consumption on the woolen system up 14 per cent in the ten-month period and on the worsted system, down three per cent, the review stated. In women's wear fabrics, woolens reached a new peak of 91 per cent of total production compared with the 1950 low of 71 per cent. In men's wear, woolens passed the halfway point with 54 per cent of total production contrasted to a low of 32 per cent in 1950.

Both men's and women's wear fabrics continued to move toward lighter weights, concentrated in nine to 19-ounce ranges, the bureau reported. Production in these weights during the first three-quarters of 1955 accounted for 44 per cent of all women's wear fabrics in contrast to 38 per cent in the 1954 period and 30 per cent in the entire year, 1952.

Corresponding percentages of these weights in men's wear fabrics were 63 per cent in 1955, 58 per cent in 1954 and 38 per cent in 1948, according to the bureau. Lightweight worsteds—weighing less than nine ounces—had important relative gains in both categories, rising from four per cent in 1954 to eight per cent in 1955 production of men's wear worsteds and from 17 per cent to 24 per cent in women's wear worsteds. In women's wear this trend marks a return to an early post-war pattern, but in men's wear, it is a new direction.

The failure of advances in clothing expenditures to keep pace with advances in total consumer expenditures is partly explained by the relatively greater advances in the prices of goods other than apparel, the bureau stated. From June 1950, to October 1955, for example, the consumer price index for clothing advanced only eight per cent, while the food and housing indexes advanced ten per cent and 15 per cent, respectively. The indexes for transportation, medical care, personal care and miscellaneous items increased between 15 per cent and 22 per cent. Only the index for reading and recreation increased less than apparel.

In recent years, the bureau noted, clothing has been selling more on a "price basis" than most other consumer goods. The contraction of textile capacity which followed the textile recession of 1953-54 has, however, brought better operating results and healthier competition for the consumer's clothing dollar. The quickening pulse of textile business at the year-end reflects the anticipation of an excellent Spring 1956 season and perhaps beyond, the bureau added.

Machinery Mfrs. See Better Business In '56

Textile machinery manufacturers will be able to take care of any foreseeable demand that may come from textile mill expansion or modernization programs created by the closing gap between textile production and sales. Members of the American Textile Machinery Association in an opinion poll of their business future were in accord that better business is expected in 1956 compared to 1954 and 1955. The improved outlook in the textile industry has alerted them to probable large scale modernization programs on the part of the mills that will mean increased textile machinery production. "Indications are that it may NOT—after all—take 40 years for the textile industry to re-equip itself," said one source. This estimate of "40 years" was based upon the slow replacement rate of new spindles over the past few years.

In the event of a boom in textile machinery orders one of the larger manufacturers of textile machinery says that its plant capacity will enable it to double or triple the number of machines now produced. Production over today's volume would be contingent only upon availability of raw material and of necessary additional labor. Other large manufacturers of textile equipment have greatly increased capacity compared to five years ago. Additional new installations are well under way, beyond the planning stage.

On the other hand, some machinery manufacturers have not increased production facilities and are operating on a new "norm" of productive output balancing textile machinery production with other diversified production. Spokesmen for such companies state that American textile machinery manufacturers will be able to take care of any rush of orders from the textile mills "but not on a short delivery basis." In other words, they caution that textile mills should start now making long-time plans for modernization programming in order to obtain equipment on a systematic delivery schedule over the coming years.

Review and forecast comments note that 1955 has been considerably better for manufacturers of capital equipment for textile mills. Figures range from increased sales and production of 15 to 100 per cent over that of 1954. Some companies state they will enter 1956 with a larger backlog of orders than any year since 1951. The upturn began about the middle of 1955 and was noted in all types of textile equipment including machines for handling cotton, woolen and worsteds, blends and synthetics. It included preparatory, spinning, weaving and finishing as well as auxiliary equipment.

Tabulations of iron pourings by the five major textile machinery manufacturers show that beginning in January 1952, the tonnage started to fall off from an average of 2,400 tons a week to a point where, in August 1954, the average tonnage figure was down to 1,200 tons. And it was not until August of 1955 that the figure equalled the January 1952 figure. The fourth-quarter reports indicate a healthy and increased tonnage based on similar reports of four years ago.

The increase in textile machinery activity was due to improved economy of the textile industry; newly introduced machines and processing (many of them shown for the first time at the American Textile Machinery Exhibition in Atlantic City in 1954); and development of more efficient equipment and equipment with greater versatility. Also,

it is felt that part of the increase may be traced to critical buyers of textiles and the increasing need for mills to maintain high qualities of their production through modernized plants and new equipment.

The old benchmark of "return on investment" is yielding to a new yardstick by which capital investments are made by textile mills: the effect modern equipment will have on cost of manufacturing and quality of the product. This is the result of narrowing of mills' profit margin and the necessity of reducing labor costs and at the same time improving quality of production in order to remain an active and profitable mill in a highly competitive market.

Many textile mills are now measuring the productivity of capital by the pay-back period instead of "return on investment" period. Such thinking serves as an incentive to modernization programming and is thereby reflected as better business for the capital equipment industry according to leading textile machinery manufacturers.

American textile machinery manufacturers have always conducted a global business. Foreign sales, however, remain a small percentage of their total business, the great majority of it being placed with the textile mills of the U. S. Many of the machinery companies have foreign representatives or agents and maintain through them foreign offices. Drastic import restrictions of foreign countries in some cases, however, virtually block all sales of American-made machines. Because of these restrictions and low labor and other costs of foreign countries, some American textile machinery firms have arranged to manufacture their product in a few foreign countries. Working agreements have been established with manufacturers in England, Scotland, France, Germany and Japan, to manufacture one or more models for distribution in the co-operating country. At least three American textile machinery manufacturers have long had their own companies overseas.

Predictions made by the Security and Exchange Commission and the U. S. Department of Commerce that manufacturers of textile mill products are expected to spend $81 million for new plants and equipment in the first quarter of 1956 is lower than the figure spent during the fourth quarter of 1955, but compares favorably with that of the third quarter of 1955 at which time textile machinery purchases by textile mills started their upward trend. All in all, American textile machinery executives are optimistic about the coming year.

Arbitration Council Marks 25th Year

A quarter century of successful settlement through arbitration of textile disputes at all levels of trade from mill to retailer was cited recently at the 25th annual meeting of the General Arbitration Council of the Textile Industry in New York City. Over the years, cases numbering into the thousands, ranging from small to very large claims, involving firms in the U. S. and overseas, and embracing goods of all fibers from yarn and cloth through converting, finishing, garment and other manufacturing, have been handled swiftly and efficiently, according to Howard A. Sherman, secretary-treasurer of the council. During the year just ended 117 cases with claims ranging from a low of $153 to a high of over $250,000, and totalling $826,562, were submitted to the council. Numerous cases now are pending.

Mr. Sherman, in commenting on the work of the council, paid high tribute to its panel of arbitrators, men from the textile industry who have given of their time without com-

pensation over many years to this important work of settling disputes in the trade. He noted that the present panel numbers more than 500 persons, and that more qualified people are being added. In order to speed up the arbitration process and provide greater assurance of fair and impartial decisions, the council voted at the meeting to change its rules for the selection of arbitrators effective June 1, 1956, to provide that all arbitrators thereafter be chosen from the official panel.

W. Ray Bell, council chairman, who presided at the annual meeting, stressed the values which it offers primarily to the members of the trade organizations which sponsor the council, and beyond them as an indispensable service to the textile industry generally.

American Viscose Reviews 1955 Operation

Taking a backward look at 1955, *Avisco News,* employee magazine of American Viscose Corp., sums up the year as one of progress in research and development, and a year that saw an upturn in textiles. The magazine points out that, for the year, rayon shipments were about 15 per cent above those of 1954; acetate was up about 12 per cent; rayon tire yarn showed a 25 per cent increase; rayon staple increased about five per cent; and cellophane showed a ten per cent increase.

Reporting on the corporation's research and development division, Dr. Herschel H. Cudd, vice-president, noted that considerable progress has been made in improving present Avisco products and laying the foundations for new ones. Among current projects mentioned were development of a superior type of tire yarn; an improvement in the spinning bath; pilot plant work on Micro fibers and the fibrous rubber Filastic; and experiments with cellophane coatings.

Other year-end observations made by the magazine included: (1) rayon staple has met with extraordinary success as new uses for it are found; (2) following the trend of recent years, the interest in industrial uses of high-strength rayon has increased; (3) acetate-nylon bedsheets, introduced in 1954, have been selling somewhat slowly—research is continuing in an effort to find means of producing a quality sheet at a mass market price; (4) developments have been made in good shrinkage control of acetate, increasing the possibility of all-acetate underwear fabrics; (5) Acrilan, produced by The Chemstrand Corp., jointly owned by American Viscose and Monsanto Chemical Co., is gaining in acceptance and further wider usage.

Firms Cited For Excellent Management

The American Institute of Management has announced that seven companies prominent in the textile industry have been certified as "excellently managed." The firms honored were Pepperell Mfg. Co.; West Point Mfg. Co.; Industrial Rayon Corp.; Cannon Mills Co.; Anderson, Clayton & Co.; American Viscose Corp.; and E. I. du Pont de Nemours & Co. Inc. This places them among the 408 American and Canadian firms cited by the institute for 1955.

Fashion Fibers Finding Industrial Usage

At the recent 25th Exposition of Chemical Industries in Philadelphia, Pa., the Du Pont company displayed a number of new and interesting industrial applications now being made of the same synthetic fibers—in slightly different form—used in the high fashion salons of Paris and New York. Some of the uses to which the fibers are now being applied include a non-woven felt of Dacron polyester fiber which is being used to make high draft ratio dust collection bags; filter bags for the collection of such products as flour, starch or fine chemicals, and for the cleaning of air going to processing areas.

Another type of felt made of Orlon acrylic fiber has been developed for dust bags used to collect highly abrasive matter. Still another important development is a lightweight, chemical resistant hose made with a jacket of 100 per cent Dacron fiber woven over a neoprene rubber tube. One of the most unusual materials exhibited was Teflon tetrafluoroethylene fiber, Du Pont's newest man-made fiber, which is reportedly finding many industrial uses. It is virtually indestructible. Boiling in aqua regia or concentrated alkalis will not damage it. It will neither burn nor absorb moisture, and almost nothing will stick to it.

Quite in contrast is a new concept in reinforcing material which is expected to help bring to the market many consumer items made of plastic rather than metal or other conventional materials now used. The material is a non-woven batt of Dacron polyester fiber, Orlon acrylic fiber or nylon. One of the unusual things about it is that the reinforcing material is formed by stitching the fibers to themselves. In other words, the batt is held together mechanically rather than by a chemical or thermal binder. This gives the reinforcement uniformity and excellent tailorability, it is said, and makes it particularly adaptable for deep-draw molding into complicated shapes without loss of strength. The result is plastic laminates of high quality and unusually smooth surface.

Visitors from all over the U. S. and over 30 foreign countries brought in an estimated total attendance for the week of 25,000 to 30,000. With more than 500 exhibitors participating, the scope of products was greater than the variety of any previous exposition.

Q. M. Views Research & Procurement

Observations made at the recent textile-apparel seminar at the annual convention of the Quartermaster Association in Chicago indicate an optimistic outlook for new research developments in textiles, but a pessimistic one for any sizeable increase in procurement in the near future. Procurement planning for the current year indicates that the level will closely parallel that of last year. New procurement is at a minimum level in an attempt to reduce stocks to minimum peacetime operating levels, it was pointed out. As stocks approach minimum levels, the need for delivery

of suppplies in accordance with contract schedules becomes increasingly important. For this reason contractors are cautioned against committing themselves to delivery schedules which they cannot meet.

The seminar approved by a vote of 11 to 1, with five members abstaining, a resolution against the compulsory inclusion of the non-discrimination clause in government contracts. The resolution was presented by the American Cotton Manufacturers Institute and seconded by Roy Cheney, president of the Underwear Institute. Mr. Cheney pointed out that there has not been a military contract for underwear taken by any mill south of the Mason-Dixon line since the revised rule became effective last year. The government, it was pointed out, is not getting bids and merchandise it should, and the mills are losing skills necessary for the production of service underwear. The seminar also heard trade association leaders warn of the possible threat to military textile and apparel demands resulting from the increase of Japanese imports into this country. Attention was called to the fact that the knit handwear industry has been shrinking alarmingly during the past four years, having lost more than 40 per cent in number of manufacturers and skilled employees. Other essential producers of military apparel stand ready to suffer in a like manner if safeguards are not imposed, it was emphasized.

Other problems receiving attention included the declining production of sufficient quantities of combed yarn needed to produce wind-resistant and other combed yarn fabrics; lack of sufficient quantities of heavy yarns needed in cotton duck and webbing; and decreasing production of merino yarn necessary for production of heavy underwear, cushion sole socks and arctic socks.

Cotton Broad Woven Goods—3rd Q. 1955

Cotton broad woven fabric production in the third quarter of 1955 was two per cent below the second quarter 1955 output, but six per cent higher than the third quarter 1954 level, according to the Bureau of the Census, Department of Commerce.

Production declines ranging from one to eight per cent were reported for all fabric groups except "towels, toweling and dishcloths" and "fine cotton fabrics," which increased seven to 12 per cent respectively over the previous period. The output of print cloth yarn fabrics declined six per cent, while that of napped fabrics, blankets and blanketing declined only one per cent. The production of other woven cotton fabrics and specialties was five per cent below the second quarter, although 30 per cent above the same quarter a year ago.

The Philadelphia Quartermaster Depot has been authorized to procure textiles and clothing on a six months schedule basis, according to a recent announcement by Brig. Gen. Webster Anderson, U.S.A., depot commander.

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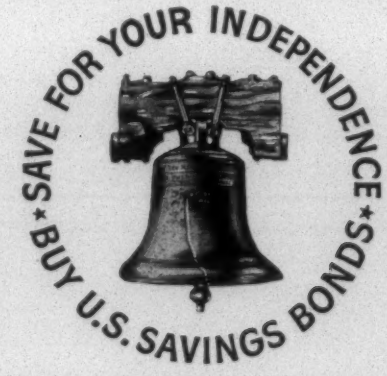

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Stanley D. Berg

Stanley D. Berg, district sales manager covering the Carolinas and Virginia for Fafnir Bearing Co., has retired after nearly 30 years with the firm. A native of Long Island, N. Y., Mr. Berg became associated with Fafnir in the early '20s. He originally worked in the Philadelphia, Pa., district, and opened the Fafnir office in Philadelphia. He was transferred to Charlotte, N. C., in 1926, and pioneered the sale of ball bearings to Southern mills. Mr. Berg plans to remain in Charlotte temporarily, but will eventually move to Tryon, N. C., where he is building a home.

James Balloch of Greenville, S. C., has been appointed sales manager for Ivey Chemical Co. Inc., Greenville. Mr. Balloch, a graduate of Clemson College, was formerly Southern sales representative for Jacques Wolf & Co., Passaic, N. J. The third generation of his family to follow textile finishing, he has had plant experience as well as experience in sales.

Norman F. Young, foreman of the bleachery for Fieldcrest Mills Inc., Spray, N. C., has been named assistant superintendent of the bleachery. Mr. Young has been with the company since May 1953. He holds a master's degree in chemistry from the Institute of Textile Technology. . . . Harold Squires, assistant foreman of the bedspread weave room since December 1952, has been promoted to foreman of that department. Mr. Squires joined the company in 1935. . . . Woodrow P. Beauchamp has joined the company as master mechanic, succeeding S. G. Strader, who has retired. Mr. Beauchamp, a native of Atlanta, Ga., has had wide experience as a machinist and in maintenance work in the textile industry. His most recent work was with Fulton Bag & Cotton Mills, Atlanta.

H. J. Smith Jr., president, treasurer and general manager of Charlottesville (Va.) Woolen Mills Inc., has relinquished his duties as president and treasurer to concentrate on manufacturing. He now holds the title of vice-president and general manager. . . . Named to succeed Mr. Smith as president and treasurer is Llewellyn P. Haden, a director for the company.

Raymond W. Jacoby, consultant to the Ciba Co. Inc. and national president of the American Association of Textile Chemists & Colorists, will begin a six-weeks' lecture course at North Carolina State College School of Textiles, Raleigh, in mid-February. Mr. Jacoby, as a visiting professor, will teach a course in textile chemistry. The course is normally taught by Prof. K. S. Campbell, who is going to Peru to assist in completing laboratory equipment installation for dyeing and finishing at the National University of Engineers. Prof. John F. Bogdan of the School of Textiles will accompany Professor Campbell. In the past 12 months, Dean Malcolm Campbell and five other staff members of the School of Textiles have gone to Peru in connection with the project.

Channing B. Brown

Channing B. Brown has been promoted to manager of the industrial power department of Duke Power Co., Charlotte, N. C. Mr. Brown, a native of Charlottesville, Va., has been with the company since 1922. . . . Named assistant manager of the same department was E. R. Davis, a native of Pittsburgh, Pa., who joined the firm in 1931. Marshall E. Lake, vice-president, will continue to have general supervision of the department.

Marc V. Shivers, superintendent of dyeing at Thomaston (Ga.) Mills, has been promoted to plant superintendent, succeeding Frank A. Wright, resigned. A native of Montgomery, Ala., Mr. Shivers is a textile engineering graduate of Alabama Polytechnic Institute. He joined Thomaston in October 1949 as dye department overseer and was named superintendent of dyeing in January 1955. Prior to joining Thomaston, he was associated with Union Bleachery in Greenville, S. C.

A. N. McFarlane

A. N. McFarlane has been elected vice-president and general sales manager of Corn Products Refining Co. Mr. McFarlane joined the technical service department of Corn Products in 1934. He served for several years as a technical sales representative and later as associate director of research. In 1944, he became manager of the chemical sales department. Since 1947 he has served as assistant to the general sales manager. He was elected a vice-president of the Corn Products Sales Co. in 1953.

Charles W. LaDow has been named manager of the new plant being built at Aliceville, Ala., by F. C. Huyck & Sons of Albany, N. Y. Mr. LaDow is assistant treasurer of the company's Rensselaer, N. Y., plant. F. Lawrence Lee, assistant superintendent of yarn making at the Rensselaer plant, will be superintendent at Aliceville. The plant, to be completed this Summer, will produce papermakers' felts and Sanforizing blankets.

J. Frank Lipe, president and manager of Linn Mills Co., Landis, N. C., has assumed his duties as mayor of Landis.

Guy L. Parmenter, superintendent of Goodyear Clearwater Mills, Mill No. 3, Atco, Ga., will retire Feb. 1. Mr. Parmenter, recently awarded a 30-year service pin, has been superintendent at the plant since July 1929. Prior to that he was for five years superintendent of the company's Cedartown, Ga., plant. He is a native of Waltham, Mass.

Robert T. (Bobby) Davis Jr., vice-president of Swift Spinning Mills Inc., Columbus, Ga., has taken office as mayor of Columbus. At 28, the former Georgia Tech football star is one of the youngest mayors in the city's 128-year history. He made the All-America team in 1947, played professional football for the Boston Yanks and was last year named to Tech's all-time team.

F. O. Robitschek

F. O. Robitschek has been appointed president and chief executive officer of Onyx Oil & Chemical Co., Jersey City, N. J. Mr. Robitschek was formerly general merchandise manager of the soap sales division of Colgate-Palmolive Co. In that position he served as head of the merchandising and sales development of synthetic detergents. He was sent to Germany in 1945 by the Technical Intelligence Commission of the U. S. Department of Commerce to study the German dyestuffs industry. Prior to that he served in Washington as an administrator with the Chemicals Bureau of the War Production Board. His responsibilities included synthetic detergents, fatty acids and alcohols, amino compounds and aldehyde derivatives. He is a member of the American Chemical Society, the Chemists' Club of New York and the Sales Executives Club of New York.

R. M. Hoyer has been appointed Southern district sales manager for Westvaco Chlor-Alkali Division of Food Machinery and Chemical Corp. He will establish headquarters at Westvaco's South Charleston, W. Va., plant about Feb. 1. Mr. Hoyer joined the company following graduation from Purdue University in 1951. W. M. Clark continues as Southern sales representative under Mr. Hoyer, with headquarters in Charlotte, N. C.

Index to Advertisers

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